To the Graduate Council:

I am submitting herewith a dissertation written by Patrick H. Tolan entitled "Multivariate Identification of Delinquent Behavior in Males." I have examined the final copy of this disseration for form and content and recommend that it be accepted in partial fullfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Raymond P. Lorion, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

The Graduate School

MULTIVARIATE IDENTIFICATION OF DELINQUENT BEHAVIOR IN MALES

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Patrick H. Tolan

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ABSTRACT

Three hundred and thirty-seven males (ages 11 to 18 were surveyed for individual, school, and family functioning, socioeconomic status, self-reported delinquent behavior, and official legal status. Subjects were divided by levels of frequency, variety, and seriousness of reported delinquent behavior. Results indicated that several individual, school, and, family variables have statistically significant, but low to moderate level correlations, with age of first delinquent behavior showing the highest correlation with each categorization method. Variables that had significant correlations with frequency, variety, and seriousness categorizations of delinquent behavior were entered into stepwise multiple regression equation. In combination, as a multivariate model, 15 variables were able to account for 36 to 45 percent of the variance in delinquent behavior. Age of onset of delinquent behavior was entered first for all three categorizations, but other variables entered in different orders, depending on categorization method. Discriminant analysis, applying a function developed on older adolescents, to younger adolescents revealed that there are at least three groups useful for identification research; a "chronic' delinquent group, who begin delinquency early and exhibit frequent, indiscriminant, and serious delinquent behavior, a group of "transient" delinquents, who begin delinquency around age 15, and appear to be involved in social experimentation, and a group of nondelinquents who exhibit little or no delinquent behaviors. Differences between the three groups on measured variables are discussed. Additionally,

issues related to methods of categorizing and measuring delinquent behavior are discussed, with particular attention to the efficacy of multivariate models for identification of delinquents and predelinquents. Implications for research, prevention, and policy are presented.

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INTRODUCTION

Identification of the factors antecedent to and predictive of delinquent behavior has been an area of extensive study by and interest to psychological, sociological, and juvenile justice researchers (cf. Empey, 1978, for summary review). A common goal of such research has been to identify variables that differentiate delinquents from their nondelinquent counterparts. In addition, at least a portion of such research attempts to designate appropiate strategies and targets for intervention to prevent further delinquent behavior (Glueck & Glueck, 1970; Wedge, 1978). The present study utilizes multivariate analyses to examine the relation of several psychosocial variables and level of self-reported delinquent behavior, for the purpose of differentiating delinquents from nondelinquents and establishing a framework for preventive interventions[1].

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[1]Traditionally, delinquency and delinquent behavior have been used synonymously to refer to subject(s) legally declared to be under the jurisdiction of the juvenile court (adjudicated). For this study delinquent behavior is defined as behavior by a child (minority age person), which if brought to the attention of legal authorities, could make that child liable for legal prosecution by a juvenile court, and includes status as well as criminal offenses. Delinquent behavior is differentiated from delinquent status as the former refers to behavior with potential legal ramifications, whereas the latter term signifies the official legal status of the individual(s), acording to official records. Delinquent behavior is differentiated from criminal behavior because the former term includes an emphasis on the psychosocial basis and ramifications of the behavior, while criminal behavior simply denotes violation of some law. Delinquent behavior, as defined in this study, is similar to the psychological concepts of aggressive behavior, antisocial behavior, and acting out, in its emphasis on the psychological implications of the behavior. However, delinquent behavior is differentiated from these psychological concepts by its

To date, most studies have focused upon one or more dimensions of a single variable (e.g. school functioning). Statistically significant correlations observed between the studied variable(s) and delinquency are then interpeted causally and used as the basis for the development of typologies and predictive scales (Glueck & Glueck, 1962, 1970; Halleck, 1967; Nye, 1959; Offer, Marohn, & Ostrov, 1979; Quay, 1964; West & Farrington, 1977). However, despite the statistical significance of correlational findings, the predictive and/or discriminative ability of such scales has been at or below chance (scales less than 50% accurate). The limited sensitivity of the typologies and scales that have been developed from such research has impeded use of the research findings in clinical practice. This limited clinical utility has been heavily criticized (Flicker, 1977; Senate Subcommittee on Juvenile Justice, 1981).

A primary focus of this criticism has been the failure of researchers to consider multiple variables simultaneously, and to utilize models that address the complex interplay between individual and environmental characteristics (Monahan, 1982; Patterson, 1981; Simcha-Fagan, 1979). Policy boards (Flicker, 1977; Johnson, Bird, & Little, 1978; Morse & Whitehead, 1982), juvenile justice officials (Polier, 1974; Streib, 1980), and methodologists (Hirschi & Selvin,

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inherent concern with the legal implications of the behavior. Delinquency and delinquent are used in the present study to refer to those exhibiting delinquent behavior regardless of official adjudication. They are general terms to describe the general population studied here.

1967; Monahan, 1982; Wedge, 1978) have cited such simplified research methodology as a major reason for the increasing disillusionment with the treatment approach (and its psychological underpinnings); hy on which has been the guiding philosophy of the juvenile court since its inception (Schur, 1971; Platt, 1969; Sarri & Hassenfeld, 1976). For example, based on a review of thirty years of Supreme Court decisions relevant to delinquency, Streib (1980) concluded that there is decreasing reliance upon psychological information by the court. He interpets this as reflecting a general scepticism by juvenile justice officials toward psychological research.

Few would argue against the position that research to identify the causes of delinquency and then to direct intervention efforts must continue. However, it is important that future work take advantage of sophisticated statistical procedures which allow for concurrent measure of multiple variables. The failure of past research and treatment programs may not be due to faulty theories or consideration of the wrong variables, but rather to limitations in methodological design. The present investigation represents an examination of the capability of several variables, identified by previous research as correlated to delinquency, to differentiate level of delinquent behavior. Multivariate statistical procedures are applied to examine the unique and interactive relationships of variables indicative of individual (emotional adjustment, social skills, plans for the future), family (marital status, family size, birthorder, socioeconomic status, systemic functioning), and school factors (grade

point average, standardized achievement test scores, failure of one or more grades, attitude toward reading, absenteeism, disciplinary actions) with self reported delinquency and delinquency status. Since the measurement of delinquency remains a complex and controversial matter. The intent of this study may be clarified by examination of the major controversies in this area. These controversies can be divided into three major issues; 1)the relationship between psychological research and juvenile justice policy, 2)the methodology of previous research, and 3)the examination of factors which correlate with (and may be causally related to) delinquency. Each of these three areas will be examined separately below. Description of the experimental design and methodology, presentation of the results, and discussion of the findings and implications of the study are presented in separate sections subsequent to the review of the three major issues named above.

CHAPTER I

DELINQUENCY IDENTIFICATION RESEARCH AND JUVENILE JUSTICE POLICY

Any research on identification and prediction of delinquency potentially has implications for the legal handling of children, and therefore, for delinquency policy. Because of this, and because of the history of an interweaving of psyhological research into juvenile policy, the efficacy of psychological research on delinquency has become controversial (Flicker,1977; Johnson, et al., 1978; Morse & Whitehead, 1982; Tolan, 1981). In part, this controversy has been fueled by the increased legalization of juvenile justice procedures (McCarthy & Carr, 1980), and the inference that increased legalization precludes a treatment/preventive approach based on a psychological conception of delinquent behavior (Connel, 1980; Platt, 1969). Also, an undue optimism about the capability of psychological research to find the cause(s) of delinquency and ameliorate the problem had been fueled by exaggerated claims of researchers (Faust & Brantigham, 1973; Wedge, 1978). As the limitations of research findings became clearer, policy boards became disillusioned with psychological research.

Because of the limited efficacy of psychological research to date, some dismiss further use of such research in forming delinquency policy and advocate replacing the psychological-treatment philosophy that has guided the juvenile justice system since its inception, replacing it with a legal-procedure oriented model (Platt, 1969). However, rather than simple dismissal of psychological research, a more

profitable approach is to examine the policy issues pertinent to applying delinquency identification research to juvenile justice policy. There are three distinct but related social policy issues, pertinent to the prediction of delinquency that merit careful discussion because of their social policy implications; 1)reliance on statistical significance versus practical utility; 2)the appropiate point in development at which to identify individuals at-risk for delinquency; and 3)the differentiation of transient versus chronic delinquency (those engaged in a temporary and relatively innocuous sort of behavior versus those who are delinquent prodromal to criminal careers). Each is discussed below.

Statistical Significance Vs. Practical Utility

Traditionally, for research purposes the standard for considering results to be valid and useful in further work has been statistical significance, defined as $p < .05$. However, as has been pointed out by several researchers (Cohen, 1977; Cohen & Cohen, 1975; Hays, 1963; Rosenthal & Gaito, 1963), the size of a correlation betweeen two variables and the level of significance of the correlation can vary as a function of sample size. For large samples small differences between compared groups on a measured variable can produce statistically significant results. The same absolute difference, or even a larger absolute difference, but with a smaller sample may not be statistically significant. With large samples, researchers may find correlations that are statistically significant but are low enough in

absolute size to have little meaningfulness as discriminators or predictors (Lorion & Lounsbury, 1982). For example, West & Farrington (1973, 1977) carried out a longitudinal study of 411 males born in London during 1952 and 1953. They report that the best predictor (the most highly correlated variable) of adjudication was a rating by one's primary grades teacher as troublesome (r=.38, $p < .001$). However, despite this high level of statistical significance the variable has limited utility as a predictor. Only 15% of the variance in delinquency status is accounted for by the rating of troublesome; 85% of the variance is unexplained. Despite the statistically significant relationship found, reliance on this "best" predictor for policy decisions, such as early identification of delinquents, would result in haphazard classification. Many of those predicted to be adjudicated would not be actually adjudicated (false positives) and many of those not predicted to be adjudicated would actually be adjudicated (false negatives).

Murray (1981) cites the different emphasis of researchers, with their concern about statistical significance, and practicioners, with their concern about having practical accurate classification rules, as a gap that is a major impediment to psychological research being more influential on juvenile justice policy. In particular, legal policy boards have become concerned with minimizing overinclusion of subjects in identification and intervention programs. They want to minimize false positive classifications because of the legalistic aura that can accompany identification as a delinquent or delinquent prone. Platt

(1969) and Flicker (1977) caution against early identification and labeling of subjects as at-risk for delinquency or predelinquent based upon variables that have limited predictive or discriminative certainty. They contend that any delinquency identification or prevention effort has legal ramifications and possible stigma, and therefore intrusion upon the identified subjects' lives is not justified unless variables developed through psychological research can more powerfully and more specifically discriminate and predict delinquency.

Lorion & Lounsbury (1982) suggest one method to narrow this gap between mere statistical significance and utility of research findings. They recommend presenting results in terms of amount of variance accounted for as well as level of correlation. They further suggest multiple regression techniques represent a relatively straightforward approach to clarifying the relation of correlational level and meaningfullness (in terms of variance accounted for). Although Lorion & Lounsbury (1982) addressed their remarks to preventive interventions in general, their suggestions are applicable to delinquency identification research. Similarly, Wedge (1978) reviewed delinquency identification research and concluded that multivariate analysis was more congruent with current theories which emphasize multiple causes interacting to result in delinquency. He recommends use of multivariate approaches, as he considers them the most powerful and most appropiate means for developing sophisticated and useful delinquency identification models.

A noteworthy example of application of the methods articulated by Lorion & Lounsbury (1982) and Wedge (1978) is Simcha-Fagan's (1979) use of multiple regression techniques to study the ability of 27 variables indicative of demographic factors, parent functioning, parent-child relationship, child characteristics, and school function, to predict delinquent behavior as reported by the subject's mother (her criterion measure). Although she found low to moderate level correlations between individual variables and the level of reported delinquent behavior (of those variables correlated at a significance level of less than .05, correlations ranged from $\underline{r}$ =.12 for having a confidential file at school, to $\underline{r}$ =.30 for age of subject) when considered as a total group, the variables accounted for 44 percent of the variance in level of delinquent behavior. If Simcha-Fagan (1978) had simply relied on individual variables and correlations, she could have explained only a negligible portion of the variance in delinquent behavior. However, as presented, the results indicate the significance of the relationship of each variable with reported level of delinquent behavior, but also present the power of the model used to account for variance in level of delinquent behavior. Simcha-Fagan's (1978) report is also noteworthy for its demonstration of the importance of considering multiple variables and the interaction of those variables in studying correlates to delinquency. Her findings suggest psychological research can provided useful information for delinquency

policy, in particular, predictive models for delinquency policy. As Lorion & Lounsbury (1982) contend, the efficacy of research rests on methodology that clarifies the meaning of results as well as the likelihood that the results were due to chance.

Even though Simcha-Fagan (1979) presents impressive results, simply moving from an emphasis on level of statistical significance to amount of variance as the method for reporting results will not align the research findings and the interest of policy boards and practicioners. Attention to the predictive accuracy (percentage of subjects accurately categorized) of variables identified and scales developed through research is necessary (Lorion, 1982; Monahan 1982; O'Grady, 1982). The primary issue pertinent to identification is reducing the number of subjects either falsely identified as being in a criterion group or falsely identified as not being in the criterion group by a predictor variable or set of variables (Monahan, 1982). Monahan (1982) contends that although accounting for a large portion of the variance of level of delinquent behavior is a desirable and necessary goal, but any identification effort must be viewed as a cost/benefit endeavor. The cost can refer to the actual economic cost of the intervention, the stigma attached to being labeled delinquent, predelinquent or some other synonym, or the intrusion caused by being labeled "delinquent". The benefit half of the ratio can refer to economic savings resulting from early remediation of the behavior, the benefits to the individual treated, and/or the benefits to society in decreased criminal behavior. To a large extent the cost benefit ratio

is dependent on the classification accuracy of predictor variables or scales. If predictors misclassify a significant portion of subjects, then the benefits accrued must be extensive and the costs limited, to justify reliance on such variables to identify delinquents. However, if a predictor variable is able to classify subjects accurately into categories of the criterion condition (in this case delinquent behavior), then the cost/benfit ratio tilts toward identification and development of appropiate interventions.

Monahan (1982) and Lorion (1982) present noteworthy concerns. Prior to developing accurate predictive models, development of correlative models that can account for a sufficient proportion of the variance in delinquent behavior, is needed. By first developing models that address the complex influences on delinquent behavior, accurate prediction can be subsequently accomplished In addition to the theoretical and methodological sense of such an approach, it is likely that such a model will be more credible for influencing policy decisions than present efforts have been. The gap between policy board's (i.e. Flicker, 1977) evaluation of the contribution that psychological research can make to delinquency policy, and the contribution that researchers think they can make, can be lessened by use of methods such as those suggested by Lorion & Lounsbury (1982) and Wedge (1978); multivariate methods and evaluation of results based on consideration of the level of correlation, the variance accounted for, and the predictive accuracy of the variables. Simcha-Fagan (1979) has demonstrated, by application of these methods, that a

significant proportion of the variance can be accounted for, and her work provides some basis for further efforts toward identifying variables that correlate to and predict delinquency. The present research extends this model to a wider range of variables then studied by Simcha-Fagan, and by utilizing a self-report measure of delinquent behavior.

When to Identify

Another issue pertinent to the application of psychological research to delinquency policy is when to identify people as at-risk for delinquent behavior. Traditionally, preventive research has advocated identification at the earliest possible point in development (Rappaport, 1977). Early identification has been considered a necessary prerequisite for intervening with problems while their detrimental effects are relatively limited and the problem is more amenable to remediation (Lorion & Lounsbury, 1982). However, this presumption requires qualification in application to delinquency identification, for two primary reasons; 1)any identification of someone as delinquent or predelinquent carries implied legal ramifications and possible social stigma, such that identification must be justifiable by the benefits it produces and/or its accuracy to be utilized in practice (Flicker, 1977; Monahan, 1982; Platt; 1969); and 2)psychological research has produced evidence that early identification and early interventions can have negative /hy off or neutral effects as well as the desired positive effects (Lorion, 1982; McCord, 1978; Rosenthal &

Rubin, 1978). Both of these reasons for qualifying the presumed advantage of early identification are briefly discussed below.

Legal Ramifications of Identification

When it was instituted, the juvenile court was expectd to serve as an alternative procedure to the adverserial legal ceremony of criminal courts (Faust & Brautingham, 1973; McCarthy & Carr, 1978). Acting under the legal principle of parens patriae, derived from the English tradition that the state has an interest in the wellbeing of all its members, especially those not able to care for themselves (i.e. children in this case), juvenile court was to be an informal meeting between a wise judge, the parents, concerned citizens, and community agents to act in the best interest of the child. The goal was to treat the youngster's problem of delinquency and, therefore, to prevent criminality. Procedural formalities, maintained in criminal court to protect the rights of the defendant, were dropped so that the child would not be traumatized by the experience, and to facilitate gathering of all pertinent information unencumbered by legal limitations. The juvenile court hearing was not a trial, but rather a meeting to develop a treatment plan for a troubled child. However, as the court developed, and it became evident it was unable to fullfill its promise of preventing criminal activity among the young, officials, politicians, and the community at large became disillusioned with the court. A greater emphasis on fair procedures and imposing appropiate punishment was instituted. Juvenile court hearings became substantially criminal trials (cf. Kent v. U.S.). Guarunteeing

procedural regularity and the legal rights of the defendant became at least as important as the treatment effect of the proceedings (Empey, 1978; Fox, 1970; McCarthy & Carr, 1981).

The increased emphasis on the legal rights of delinquents has been the context for some legal writers' (Fox, 1970), and some policy boards' (Flicker, 1977; Johnson, et al., 1979) contention that delinquency represents first, and foremost, a legal status. Therefore, any intervention, including early identification, has legal ramifications, and must be predicated on, at least, reasonable cause (a legal principle that legal interventions require some substantial evidence that the person has broken a law). This reasoning could severely limit preventive efforts to decrease delinquency. However, if psychological research can provide reasonably accurate prediction of delinquency, reasonable cause would seem to be satisfied. The controversy can be characterized as to what degree of accuracy psychological research must classify or predict delinquents to justify early identification without elaborate legal procedures.

Several reviewers of previous preventive efforts, based upon psychological research, have dismissed most projects as not able to discriminate those likely to commit further crimes from those not likely to do so, not practical, or ineffective (Flicker, 1977; Johnson, et al., 1979). As these reviewers are pessimistic about the contribution that psychological research can make to delinquency policy, they advise abandoning the treatment approach and replacing it with singular emphasis on guarunteeing procedural regularities (i.e.

right to counsel, evidentiary rules) (Flicker, 1977; Fox, 1970; Johnson et al., 1979; Platt, 1969). Others have warned that such conclusions are not warranted (Connel, 1980; Sobel, 1978, 1979). Connel (1980) considers singular interest in maintaining legal correctness shortsighted. Such an emphasis will let procedural considerations eclipse the original intent of the juvenile justice system as a prevention oriented system. Any substantial difference from adult criminal court would be eliminated. Observation of the multiple problems of the adult criminal justice system, argue against transforming the juvenile justice system into a junior model of adult criminal court (Polier, 1974). Simply adopting the legal model utilized in adult courts will not ameliorate the problems of the juvenile justice system, and is not a desireable resolution of the problems of delinquency identification efforts.

It seems that a tension between interest in early identification and an emphasis on the legal justification will continue for some time. However, concluding that early identification undercuts legal procedures or that the psychological well being and legal interests of children are mutually exclusive does not seem justified, if the contexts for these conclusions are examined. Three influences can account for development of the attitude that legal concerns and early identification are inherently conflictual; expanded interest in defendant rights throughout the legal system (cf. LaFave & Scott, 1972; Weinstein,1973), an increasing use of diversion as an alternative to juvenile court, and the perceived limited efficacy of

much of the psychological research. A brief examination of these three influences reveals that only limited research efficacy represents a substantial impediment to utilizing early identification research in juvenile policy.

Expanded rights of defendants. The last twenty years has witnessed a great expansion of the rights accorded delinquents during adjudication procedings (Weinstein, 1973). Much of this expansion can be attributed to extension of rights previously secured for adult criminal defendants to delinquents (McCarthy & Carr, 1981). Until the middle third of this century, due process rights and other procedural guaruntees for criminal arrest and trials were very limted in comparison to what is guarunteed today. As these rights were established as due adult defendants, test cases to extend the rights to minority age defendants were brought before the Supreme Court. Most of the rights accorded adults, have been applied to delinquency proceedings. However, in several of its decisions of these test cases, the Court emphasized that the juvenile court was differentiated from adult criminal court by its emphasis on treatment and prevention (Weinstein, 1973). Whereas, adult criminal proceedings are primarily concerned with determining guilt or innocence. It is the juvenile court's primary mandate to determine treatment needs (McCarthy & Carr, 1981). Legal ceremony is not considered conflictual with preventive efforts, but rather, the emphasis is a recognition that the Constitution applies to minors as well as adults. Concurrent attention to rights and to treatment needs is necessary.

Increased diversion. The emphasis on procedural regularity developed within the context of official hearings serving less as an early intervention to prevent serious criminal activity and more as the final resource in a series of preventive efforts, often beginning with a warning from the police, followed by diversion programs, and unofficial probation. The delinquency hearing took on a new meaning, as it was often a last resort, and the official procedure for instituting incarceration or other significant coercive intrusions. Because of the possible severe loss of freedom involved, attention to legal procedures became quite important.

It seems that as long as juvenile hearings function as trials, strict attention to legal rights during hearings should occur. However, as diversion activities function more in the role originally ascribed to the court, it seems that the less emphasis on legal procedures at the early identification stage is necessary. At that stage, early identification and prevention goals should take precedent. However, the best method for justifying the use of early identification efforts is basing it on psychological research that is methodologically sound and that has utility for practicioners. Then, the minor intrusion caused by identification efforts would be justified.

Limited efficacy of psychological research. The third basis for the perceived conflict between legal concerns and early identification, is that previous efforts have not been able to develop identification or prevention models that are powerful enough or accurate enough to be utilized by practicioners (Simcha-Fagan, 1979;

Wedge, 1978). As has been emphasized throughout this report, because of the equivocal results reported by most research projects (cf. Romig, 1978), policy boards have been reluctant to support lesser emphasis on individual rights in order to facilitate early intervention. Clearly, development of more pertinent identification and prevention models would be the desirable resolution to this problem. However, development of predictive models must be carried out with adequate planning and a firm empirical base. As is evidenced below, careful examination of the ramifications of any preventive effort is necessary to restore credibility to psychological research on delinquency (Lorion, 1982).

Varied Effects of Early Identification and Interventions

As mentioned above, preventive researchers have tended to presume that early identification and intervention would have ameliorative effects. But, an examination of several early intervention projects suggest this is a naive presumption. Fo & O'Donnell (1975) randomly assigned 264 youngsters referred by a juvenile court, to either a treatment condition (consisting of being assigned a buddy to talk with and spend time with), or to a no treatment control condition. They found that the program significantly reduced the number of serious offenses for those subjects that had committed serious offenses in the year prior to the implementation of the treatment. However, for those subjects who had not committed any serious offenses prior to referral, participants in the the buddy program, committed significantly more offenses than comparable controls. Fo & O'Donnell comment that these

results argue against wholesale identification and inclusion of subjects in preventive efforts. Additionally, the results argue against treating populations identified as delinquent as though they are homogeneous for all characteristics. The effect of a preventive effort may depend, in part, on the population treated.

McCord (1978) conducted a follow-up study of 410 of an original sample of 506 subjects from the Cambridge- Somerville deliinquency prevention project (Powers & Witmer, 1951). Subjects were included in the original study because they had ben judged to be delinquency prone. Half of those identified had been randomly assigned to receive counseling services, and the other half served as a no treatment control. In the followup study, McCord compared subjects from the two conditions on 57 variables related to criminal behavior, physical health, and psychosocial functioning. Comparisons on seven of the variables found significant differences. Contrary to the expected direction, all of these significant differences favored the no treatment control subjects; control subjects were less likely to have committed more than one crime, to exhibit signs of alchoholism, to manifest signs of mental illness, to report having had a stress related disease, to have occupations with lower prestige, or to report their work was not satisfying. Also, of those subjects that had died, subjects from the treatment group tended to die at younger ages.

Citing McCord's study as an example, Lorion (1982) comments that prevention efforts that presumed only positive effects are naive. He suggests that understanding the long range effects of preventive

efforts are necessary. Lorion recommends methodologically sound research as a requisite for understanding the long term risks of early identification and intervention. Without such considerations, he warns, the credibility of preventive efforts will be limited. Commenting on McCord's (1978) study, Sobel (1978) cautions against concluding that psychological research can not contribute to delinquency prevention. She labels such a conclusion analagous to throwing the baby out with the bathwater. Instead of a general dismissal of early identification efforts, she suggest viewing the McCord (1978) results as useful information about the effect of the illustrative intervention, and of the need to utilize methodology that is capable of appropiately studying a complex phenomenon such as delinquency. Lorion (1982) and Sobel (1978) are both concerned with researchers adopting methodology that can sufficiently account for varied influences and outcomes of prevetive interventions. Credibility is effected directly by the soundness of the methods used to derive results. Another possible threat to credibility of research is inaccurate classifications of subjects into criterion groups. Two studies of the prediction of dangerousness described here, illustrate the potential problems resulting from misclassification.

Monahan (1976) reviewed studies on the prediction of violence from psychological variables. He observed that its occurrence is vastly overpredicted (54 percent to 99.7 percent in the studies he reviewed). Because the predictors produced such a large percentage of false positive classifications, and since a potential cost of

misclassification was loss of freedom for some subjects, he concluded that present predictive methods are inadequate. He cautions against reliance on such variables and that restraint of dangerousness prediction is necessary until more accurate and more powerful predictive variables or scales can be identified. Similarly, Schlesinger (1978) reviewed nine studies of predictors of dangerousness in delinquents. From these studies he identified 30 variables statistically related to dangerousness, and applied these variables to 122 cases referred by juvenile court for evaluation to predict dangerousness. In a one year followup of the subjects, Schlesinger found that only a small percentage of those predicted to be dangerous by the identified variables, actually committed a violent or dangerous offense subsequent to the evaluation. None of the identified predictors systematically related to dangerousness. Also, the relationship between predicted dangerousness and subsequent dangerous behavior was not significant. He concludes, like Monahan, that such evidence argues for tempering predictive efforts until more powerful and specific predictive variables and scales can be produced. Unless more accurate predictors are identified, many adolescents are likely to be wrongly identified as dangerous. Schlesinger also criticizes simple reliance on significance level to consider the utility of a variable in predicting dangerousness. He suggests consideration of the sample size, sample characteristics, and situational influences to evaluate the meaning of a results. Schlesinger's criticisms would seem to be satisfied most readily by a a model that measures multiple variables,

and can consider the interactive effect of those variables, such as the approach used in the present research. Such an approach seems the most viable and sound means of furthering research and developing complex, credible predictive models.

As these examples show, researchers interested in early identification of delinquents must consider the impact, positive and negative, of their efforts, if they wish to provide useful information for policy decisions. This observation has been noted by legal policy boards, also. Flicker (1977) recommends caution in basing any delinquency proceedings including identification on psychological research until clear positive effects can be demonstrated and negative effects minimized. She contends that, at present, the research evidence indicates that most predictors are inaccurate and until more substantial findings are developed, the interest in early identification should be supplanted to guarunteeing the legal rights of children, which will reduce the likelihood of false positive identification. She concludes that labeling of someone as delinquent or delinquent prone implies criminal activity, and can be stigmatizing. Therefore, adequate proof the child is actually delinquent prone and that he/she will from the identification is necessary.

The effect of labeling on delinquent behavior and its implications for identification efforts remains unclear. Extensive theoretical and analytic writing about the manner in which labeling is thought to influence and increase delinquent behavior can be found (Empey, 1978; Mahoney, 1974; Rappaport, 1977; Schur, 1971, 1973). The

basic hypothesis of labeling theory is that court appearance and involvement in other legal procedures are detrimental to the delinquent, because in reaction to being treated like a criminal by the police, courts, and others, the child begins to identify himself as a criminal. This change in self identification perpetuates and increases delinquent behavior. According to labeling theory, it is the stigma attached to societal labeling as a delinquent that perpetuates and causes further delinquency. Schur (1973) contends that a large portion of delinquent behavior is due to stigmatization, resulting from societal reactions. He suggest that most delinquents are first brought to the attention of juvenile officials due to status offenses (only illegal because of age of the offendor; i.e. staying out all night, truancy) or minor criminal offenses such as shoplifting. According to Schur, it is the intervention, and the labeling of the behavior as indicative of a defect in the actor that causes further and more serious crime. He recommends not intervening with status and minor criminal offendors. Instead, he recommends leaving children alone whereever possible, and if some intervention is necessary, diversion from legal procedures are best. According to Schur (1973), political reforms and organizational changes that increase societal tolerance for deviant behavior are more important and would be more influential than intervening with individual offendors. Schur (1973) qualifies his statements by noting that his version of labeling theory is not a means for accounting for all delinquency, but rather, one explanation of a complex phenomenon (delinquent behavior).

The empirical tests of labeling effects on delinquent behavior have not been conclusive. Gold & Williams (1969) studied the relationship of apprehension and subsequent delinquent behavior. They compared 35 matched pairs (by age, sex, race, and number of offenses on self-report measure) of apprehended and not apprehended subjects. In 20 out of the 35 pairs the apprehended member had committed more offenses than the unapprehended member; in 10 of the pairs the apprehended member committed fewer offenses; and in 5 of the pairs, both members had committed an equal number of offenses. Gold & Williams (1969) consider these findings supportive of a labeling effect, that apprehension caused further delinquent behavior. However, this conclusion requires qualification, given the equivocal results they report. A more appropiate interpetation of the results would be that those apprehended were, taken as a group, more likely to commit somewhat more offenses, but that this tendency varied extensively between pairs. Further research to discern what factors caused the variance in comparitive offense level is needed, to clarify the role of labeling effects accompanying delinquency identification.

Thornberry (1973) has shed some light on which variables contribute to a variance in labeling effects. Thornbery (1973) studied the correlation between severity of disposition of judicial actions and subsequent delinquent behavior. Severity of disposition was defined as the level of constraint on movement and freedom placed on the child, ranging from a mere warning to institutionalization. Thornberry found that for some subjects more severe disposition correlated

to more subsequent delinquent behavior, but for others, it was not related. White subjects, those from upper socioeconomic status, and subjects who were initially apprehended for minor offenses who received severe dispositions were more likely to commit a greater number of subsequent crimes than those who with the same characteristics that had received less severe dispositions. However, for black, lower socioeconomic status, and those who had initially committed serious offenses, the severity of disposition did not effect subsequent level of delinquent behavior. Also, Thornberry (1973) found that seriousness of disposition did not correlate to seriousness of subsequent delinquent behaviors. As the findings of Gold & Williams (1969) suggest, Thornberry's results support to some extent the hypothesis that offical labeling as a delinquent can effect subsequent behavior, but subject characteristics seem to interact with the effect.

Mahoney (1974) reviewed several studies of labeling theory, and reported that labeling effects are often transient and have limited influence on situations and relationships beyond juvenile court. She concludes that a general labeling effect was not supported, and that specific effects are difficult to isolate. She notes that on the average, subjects appearing before the court have committed several delinquent behaviors (Wolfgang, Sellin, & Figlio, 1972) and have been previously identified by others as deviant (West & Farrington, 1973); therefore, it is quite possible that the self identification as a

deviant had already occurred, prior to official labeling as a delinquent.

At least, it is difficult to tease out the effect of labeling due to official identification as a delinquent from other influences on delinquent behavior. Second, it is difficult due to document that a given behavior is specifically to the result of labeling effects. Third, most of the studies of labeling effects on delinquent behavior have relied on adjudication as the labeling act. As will be more full discussed in the next chapter, there is substantial evidence that those delinquents adjudicated are a nonrepresentative minority of the adolescents engaging in delinquent behavior (Glaser, 1979; Wolgang et al., 1972; Williams & Gold, 1972). Many have been labeled as problematic or delinquent by teachers and peers prior to any formal hearing either due actual behavioral problems or because of mistaken attribution. Also, the effect of a formal adjudication hearing, in a court, before a judge, lawyers, and other officials, is probably quite different from that arising from less dramatic interventions such as the present research. Fourth, the evidence of labeling effects from research from other settings has remained equivocal, with some claiming the effects are substantial, and others contending any observed effects are either minimal or transient (Rosenthal & Rubin, 1978). Practically, the research on labeling effects does not support abandoning identification efforts. A more appropiate conclusion from the labeling research is Lorion's (1982) suggestion that researchers

in preventive efforts must consider the possible negative effects of their efforts, as well as the hoped for positive effects.

One study that may clarify to some extent the controversy over labeling effects is a study by Davidson (1975), carried out as part of a larger diversion research project. In this diversion project, adolescents being considered for referral to juvenile court were diverted by police to a program in which they were paired with a student from the university. The referred subjects were randomly assigned to either a control condition, in which they were simply interviewed or to a treatment condition, in which, they received a combination of services, emphasizing contingency contracts between the subjects and teachers, community members, and parents. In Davidson's (1975) study he compared the treated subjects that fared well with those that did not (fared well was defined as relatively few police contacts, low number of subsequent delinquency petitions, and any police contacts and subsequent petitions were for nonserious acts). He found that subjects who did not fare well in the project, tended to be subjects that had become involved with the police and courts almost immediately after referral to the program. Once they became entangled in the legal system, other concerns (such as school and family relations) became secondary. Davidson (1975) suggest that court involvement may exacerbate the conditions that lead to delinquency, by creating a crisis in legal status, which strains family and community resources and limits the the attention that can be paid to remediating the conditions that supported the delinquent behavior in the first

place. This causal inference is different from labeling theory. Davidson (1975) is stressing the constraint that legal entanglements place on time and resources of the adolescent, which limits the energy that can be focused on preventing further deinquency. He considers the competition for time and attention between legal concerns and remediation efforts as the cause of increased delinquency subsequent to adjudication, rather than mere labeling. Davidson (1975) presents a more plausible explanation for incresed delinquent behavior subsequent to adjudication. Davidson's results and conclusions do not argue against early identification, as labeling theory often does. Instead, it supports early identification and intervention, before legal difficulties eclipse all other concerns.

Despite the trepidation that can be instilled by McCord's (1978) and Lorion's (1982) warnings, an examination of the research on the effects of labeling and delinquency identification, suggests that it is not labeling per se that causes delinquency, but rather, a state of ongoing crisis, induced by legal entanglements following adjudication, that correlates to subsequent delinquency. Identification efforts certainly should give appropiate attention to the possible negative effects of identification as a delinquent, and further research on how labeling via early identification effects subsequent behavior is needed. Also, although examples have been provided to illustrate problems that can possibly limit the utility and viability of early identification efforts, they are not representative of many beneficial efforts. The cursory dismissal of identification efforts and of

psychological research on predictors of delinquency as suggested in some legal policy writings (i.e. Flicker, 1977) is not warranted. Further research to refine our methods provides a more constructive response.

Age at Which to Identify

As mentioned above, the presumption has been that early identification is more desireable than later identification as it provides an oppurtunity to intervene before the problem has become recalcitrant. As has been shown, this presumption requires some qualification due to legal considerations and evidence from some preventive research, that prevention efforts can have undesireable effect. In addition to these considerations, there have been suggestions recently, that various points in development are critical periods for formation of different behavioral patterns, and that preventive interventions are most likely to be effective if identification and prevention efforts are attuned to the critical stage for the target behavior (Bloom, 1964; Hobbs & Robinson, 1982). Predictive efforts prior to the critical period are likely to have limited accuracy. Behavioral patterns are not yet crystalized into lasting form prior to the critical period, and therefore accurate prediction is difficult. Identification past the critical period can preclude intervening while the problem is still amenable to preventive change. As Toby (1965) notes, accurate early identification presumes that crucial etiological elements are present at the time of prediction. The critical period is when all necessary and sufficient etiological influences are present and formation of

lasting predispositions or fixed behavioral patterns emerge. For example, Bloom (1964) suggest that the critical period for intelligence is age three or four. Prediction of future intelligence level is difficult prior to this time, but very reliable subsequent to this period. Therefore, he contends this time represents the optimum time for preventive interventions, and this period is the earliest useful time for prediction of future intelligence.

Hobbs & Robinson (1982) suggest early adolescence is a critical period for formation of social attitudes and behaviors. Early adolescence (ages 11-13) is a time when delinquent behavior is still relatively rare (Hindelang, Hirschi, & Weis, 1981). Delinquent behaviors commonly exhibited during this time are relatively minor, but exhibition of delinquent behavior during this period has been correlated to later serious delinquency (Loeber, 1982; Shannon, 1976; Wolfgang et al., 1972). Wedge (1978) identifies early adolescence (ages 11-13) as the optimum time to identify person as at-risk for delinquency. This age period provides identification early enough to allow intervention before the undesired behavioral patterns are fully developed, and yet is close enough in time to the common onset of delinquent behavior to minimize overidentification due to unaccounted for intervening influences occurring between the time of prediction and onset of the criterion event (Sameroff, 1977). Most pertinently, overidentification (false positives) is kept to a minimum because more specific variables can be used to predict, whereas earlier identification often relies on variables that are less specifically predictive of a particular

condition (for the present interest delinquent behavior). Also, attempts at identifying delinquency prior to early adolescence have been unsuccessful (Craig & Glick, 1965; Glueck & Glueck, 1962; West & Farrington, 1973). However, the hypothesis that early adolescence is a good stage in development to identify delinquents needs testing. A preliminary testing is carried out in the present research. To do so, models developed to discriminate level of delinquency in older adolescents (ages 15 to 18) are applied to subjects from the youngest age category (ages 11 to 13) and the models' ability to classify subjects by level of delinquency was tested. It was hypothesized that this model will sufficiently discriminate levels of delinquent behavior among younger adolescents, and this ability will be due to the presence of the major etiological influences on level of delinquent behavior by early adolescence.

Differentiating Transient Delinquency From Prodromal Criminality

Although delinquent behavior is rare prior to adolescence, by midadolescence it is common, with prevalence rates of 80 percent typically found (Empey & Erickson, 1972; Hindelang, et al., 1981; Wiliams & Gold, 1972). The majority partake in delinquent acts impulsively and engage in relatively minor crimes. Most will discontinue the activities on their own. However, some of these adolescents are engaged in a preliminary stage of chronic criminal activity. An important task for delinquency identification research is to discriminate those adolescents engaged in delinquent behavior as a

transient interest from those engaged in delinquent behavior as a prodromal form of serious crminality. This discrimination can help direct prevention planning and disposition determinations (i.e. who needs intervention and who should be left alone).

Psychological research has not identified many variables that discriminate prodromal delinquency from transient delinquency. At present, the variable most useful in discriminating these two groups seems to be the number of previous officially reported crimes. Wolfgang et al. (1972) followed a cohort of 9945 boys from a working class neighborhood in Philadelphia. Most of the cohort subjects had committed some delinquent behavior and 35 percent had at least one officially recorded police contact. But of those with at least one police contact, 46 percent had only one contact. On the other hand, six percent had five or more contacts, and this group was responsible for over half of all crimes attributable to the entire cohort. Wolfgang et al., found that the likelihood of committing another crime increased as a curvilinear function of number of previous crimes. Those who committed one crime had an average probability of .54 of committing another crime, whereas those committing 4 crimes have an averaged probability of .74 of committing another crime, and those committing 13 crimes have an an average probability of .88, of committing another crime (Wolfgang et al., 1972, p.162). Similarly, Petersilia (1980) reports that those subjects committing three or more officially recorded delinquent acts have a much higher probability of career criminality (repeated serious offenses as an adult). than

those committing less than three crimes. However, waiting until someone has been to court three or four times to determine whether or not they will recidivate has significant social costs to needlessly victimized others. Wolfgang et al. (1972) reported that most delinquent acts were not brought to the attention of police, and most subjects who were caught did not appear in court until they had been caught four times. So, simply waiting until someone has been to court four times is not a satisfactory means of differentiating prodromal criminality from transient delinquency. Also, Davidson's (1975) findings suggest that any remedial interventions after someone has been adjudicated is likely to be seriously impeded by the demands of the subject's legal problems. Reliance on predictors that allow earlier intervention is required.

One predictor that may be useful is early delinquency. As mentioned above, delinquency before midadolescence is rare. Wolfgang et al. (1972) found that early delinquent behavior was common among the subjects that were involved in repeated and serious delinquency later in development. Similarly, Loeber (1982) early delinquent behavior seems to predict serious delinquency by midadolescence. Moore et al. (1981) reported that children who steal have a high likelihood of adjudication during adolescence, and they suggest that early delinquent behavior is the best predictor of later delinquent behavior.

Early age of onset of delinquency, in combination with several psychosocial variables culled from the research review in Chapter III

seems to hold the most promise for developing a predictive model that allows for intervention early enough to limit needless harm to society, and yet minimize inclusion of those not in need of intervention.

Implications of Social Policy Issues for Research

The immediate and potentially important influence that psychological research on delinquency identification can have on its subjects and on their legal standing, requires careful scrutiny of research methods and results of such research. At the same time there is ongoing pressure to forgo methodological concerns and provide immediate specific results to guide public policy (Senate Subcommitte Hearings, 1981). Previous research efforts have not been able to provide results that can guide policy, or even form a base for policy oriented research. Research methodology has often been a reason for this limited ability. At first glance, the conflict between policy interests and research interests appears unresolveable. However, a closer examination of the pertinent issues has shown that this is not so. Steady, sound progress seems possible if adequate attention is paid to methods and to the limits and generalizability of results.

CHAPTER II

METHODOLOGICAL ISSUES

As was frequently noted in the last chapter, despite the large number of research efforts, psychological research has not been able to develop delinquency identification and prevention models that are acceptable to practicioners or reliable enough to guide policy (Flicker, 1977; Johnson, et al., 1978; Monahan, 1982; Murray, 1981; Polier, 1974; Wedge, 1978). Some have suggested this is due to a focus on the wrong variables, and suggest shifting efforts to other considerations such as ensuring that delinquency processing adheres to legal and Constitutional requirements (Flicker, 1977; Murray, 1981) or implementing organizational and political change to alter the court's role (Schur,1973). Others have suggested, and the view taken here, is that the impact of psychological research on delinquency policy has been blunted by methodological flaws and simplistic analyses of delinquent behavior. Because of these methodological weaknesses the research has not been able to adequately address the complexity of delinquent behavor and the juvenile justice process (Hirschi & Selvin, 1967; Patterson, 1981; Simcha-Fagan, 1979; Wedge, 1978). Some of those methodological limitations were touched on in the last chapter, in the context of their effect on juvenile justice policy. Three other major metodological limitations can be readily identified. The first is the practice of examining each variable in isolation. The second major limitation is the reliance upon official statistics to signify

delinquent behavior rather than utilizing self report measures or a combination of self-report and official statistics, so as to differentiate official status from level of delinquent behavior. Another aspect of this limitation has been the lack of clarity about how to classify delinquent behavior for use in research. The third major limitation is sampling and interpetations errors. The nature of each of these limitations and their relevance to the present research will be briefly discussed below.

Isolated Study of Variables

Any review of the delinquency literature will reveal that several variables, representing diverse hypothetical causes of delinquency, have been correlated significantly with delinquency (Andrew, 1981; Empey, 1978). Many of these are relevant to discriminative and predictive endeavors. However, most studies, to date, have focused upon one variable or factor (i.e. multiple indicators of school problems correlatd to delinquency) to the exclusion of others. Even though these variables are correlated to delinquency at statistically significant levels, and are congruent with the experience of practitioners (Polier, 1974), they do not, by themselves account for a large enough portion of the variance or discriminate delinquents from nondelinquents accurately enough. Of the studies measuring multiple variables, most have analyzed each variable's relation to delinquency individually (Glueck & Glueck, 1950, 1962; McCord et al., 1959; West & Farrington, 1973, 1977). Not only does this practice increase the

likelihood of finding an erroneously significant relationship between some variable and delinquency (i.e. using multiple X2s), but, as was discussed in the last chapter, it can limit the power of the statistical analyses to account for the interaction of variables and produce a model that is complex enough to provide adequate explanation of delinquent behavior for application beyond merely satisfying scientific interest.

The preferable approach is to use methodologies that can simultaneously consider the relationship between delinquent behavior and several variables, and examine both the individual correlation between each variable and delinquency, and analyze the collective effect of the studied variables. The most appropiate approach to accomplish these tasks would be multivariate statistics (Lorion & Lounsbury, 1982; Simcha-Fagan, 1979; Wedge, 1978). At this point in time, exploration of various models and the interaction of several types of variables are needed. However, some consensus of the variables most likely to be useful is emerging. Monahan (1982) summarized the major variables common in attempts to predict delinquency and suggest that three major factors emerge; parent, child, and school factors. He recommends focus upon these three factors and their interaction for further delinquency research. Similarly, Wedge (1978) suggest use of a combination of ratings of school behavior, individual personality measures, and family organization. In her examplary study, Simcha-Fagan included measures of parental functioning, child-parent interactions, and school functioning, as she considers these factors

the most influential on delinquent behavior. As will be clarified by the review of the research on critical factors for identifying delinquency, in the next chapter, a combination of variables reflective of individual, school (academic skill and behavior), and family factors are likely to provide the most ability to explain variance in level of delinquent behavior. Therefore, variables indicative of those factors are included in the present research.

The Method of Measuring Delinquency

Several of the major studies of identification and discrimination of delinquents have relied on official records such as arrest reports, or court records to categorize subjects as delinquent or nondelinquent (Glueck & Glueck, 1950, 1962; McCord et al., 1959; West & Farrington, 1973, 1977). These studies have been very influential on subsequent research and judgements about the efficacy of psychological research. Unfortunately, because of this reliance on official reports to differentiate delinquents from nodelinquents, their findings may have misled subsequent researchers and policy boards. An examination of the problems with relying solely on official measures of delinquency reveals that misled interepetations of the implications could readily develop.

According to official statistics, delinquent behavior has been increasing since the 1950s. These statistics suggest that for the most part delinquent behavior is the province of lower socioeconomic groups, minorities, males, and urban communities (Uniform Crime Reports, 1976, 1981). These trends seem to present some clear

implications for policy as well as specifying the major causes of delinquency. However, the apparently clear correlations and trends are misleading about actual patterns of delinquent behavior, and the relative prevalence of delinqunt behavior among various socioeconomic, racial, and rural-urban groups. In contrast, to these "clear" trends, self-report measures suggest that although delinquent behavior is more prevalent among males, prevalence rates do not vary systematically as a function of urbanicity, race, or socioeconomic status. Several researchers have criticized offical statistics for failing to include a large segment of delinquent activity in their assessments (Elliot & Voss, 1975; Gold & Reimer, 1975; Hindelang, et al., 1981; Williams & Gold, 1972).

For example, Williams & Gold (1972) found that, on the average, subjects were caught by police for about three percent of their delinquent behaviors. Of those caught, 19 percent of the males and 17 percent of the females were officially arrested, with the rest released or diverted into unofficial interventions. Less than half of those arrested were officially adjudicated. Williams & Gold (1972) estimate that about one percent of the delinquent acts result in official court record as a delinquent. Additionally, they report that the probability of an official recording of the act varies for different people. Older, black, and male subjects were more likely to have official action taken for a given crime, than their white, young, or female counterparts. Glaser (1979) and Howlett (1973), in separate examinations of the adjudication process, both found that defendant

race, socioeconomic status, dress, and cooperation were influential on action taken by the court. Both also found that these factors were at least as influential as the nature of the offense and previous offenses. Although some small relation between frequency of delinquent behavior and official status has been found (Tau $\underline{C}$ = .11, $\underline{p}$ < .001, Williams & Gold, 1972), and between seriousness of delinquent behavior and official status (tau $\underline{C}$ = . 06, $\underline{p}$ < .01 Wolgang et al, 1972), both correlations leave most of the variance in delinquency status unaccounted for. Glaser's (1979) and Howlett's (1973) findings suggest, that much of that variance could be due to variables that are extraneous to need for treatment or threat posed to others (the legitimate reasons for adjudicating a person).

Hindelang (1974, p.2) listed the problems in sole reliance on official statistics:

1. Some unknown number of offenses committed by the sample are never discovered.
2. Of those discovered, some are not reported to the authorities.
3. Of those reported to the authorities, some are not recorded.
4. The offense categories used are very broad (e.g. robbery) and hence, very dissimilar events can fall into the same category.
5. The definitions of offense categories vary from time to time and from jurisdiction to jurisdiction.
6. Procedures for handling multiple offenses and multiple victims in the incident have not been worked out in a detailed and standard way
7. A good deal of important information about the circumstances of the offense, the extent of injury and monetary loss, the victim-offendor relationship, and so on is not recorded in official files.

In addition to the underestimation and bias of official statistics, several other limitations in its utility as a measure of delinquent behavior can be noted. Recording practices vary from year

to year and from jurisdiction to jurisdiction. Recording forms and procedures are not standardized and recording juvenile crimes was not standard practice in some areas until the early 1970s, (Hindelang et al., 1981). For example, Empey (1978) notes that official statistics show that between 1950 and 1953 there was a 70 percent increase in serious delinquent crime in Philadelphia. However, the reported increase was almost entirely attributable to a change in recording policy that led to inclusion of more police interactions in official records. Also, as policy changes, what is recorded as an official contact or indicator of crime can change. Nettler (1974) added that since official statistics can have substantial influence on economic support for social agencies and the political power of the agency's adminstrators, recording procedures may be changed, causing an increase or decrease in the crime rate, depending on the desired political effect, without any concordant change in actual crime level.

Proponents of use of official statistics criticize self-report measures of delinquent behavior, claiming that self-report measures inflate the prevalence of delinquency, because most delinquent behavior reported on such measures are trivial but technically illegal acts such as truancy or alchohol use. They contend that since most of the self-reported delinquent behavior reported is inconsequential, results based on self-report measures will mislead subsequent researchers and policy boards. They suggest that serious delinquency should be the concern of delinquency researchers, and that official statistics reflect the prevalence and incidence patterns of serious delinquency,

without contamination by trivial delinquent behavior, and therefore, official statistics provide a better measure of the delinquency of concern to researchers and policy boards (Farrington, 1973). However, in fact, research suggest that offical statistics are not resistant to contamination from minor crimes, and that seriousness of delinquent behavior is not a good predictor of official status (Williams & Gold, 1972; Hindelang, et al., 1981).

Another complaint registered by critics of self-report measures of delinquent behavior is that the validity and reliability data for such measures are inflated because subjects tend to accurately report minor delinquent behaviors, but underreport serious delinquent behaviors. Research suggest that although this is true to some extent for some subjects, for the most part subjects report delinquent behavior accurately. Clark & Tift (1966) administered a polygraph test to subjects who had completed a self-report of delinquent behavior and found that 92 percent reported acurately. However, of the eight percent not reporting accurately, three-quarters concealed crimes,and only one quarter overreported. Similarly, Hindelang, et al. (1981) validated their self-report measure of delinquent behavior by follow-up in depth probes of random subjects, correlation of self-reports with reports of others, and by checking self-reports of official contact with legal authorities with official records. Based on these methods of validation, they report 80 percent of their 6976 subjects reported accurately. However, of those reporting inaccurately, most tend to conceal, rather than overreport. So, there

is some basis for concern about the accuracy of self-report measures, particularly as accurate measures of serious delinquent acts. But, it is unlikely that any measure will ever achieve 100 percent accurate assessment of the prevalence of delinquent behavior, and each method has its unique limitations. Comparatively, self-report measures seem to be more sensitive to and reflective of actual behavior than official records. Official records appear to serve best for assessing official delinquency status and for clarifying the relationship of delinquent behavior to status. Better than using either self-report or official records exclusively is measuring both and comparing findings from both methods. Combining official record measurements and self-report measures, provides a means for estimating prevalence and incidence of actual delinquent behavior, comparing the relation of behavior to status, and clarifying processing biases that may be influencing who becomes officially delinquent. As the interest of this project is in examining the utiity of several variables in identifying and discriminating subjects by level of delinquent behavior, self-report has been primarily relied upon, with official status a secondary consideration. For that reason, the measure prepared by Hindelang et al. (1981) is used for most of the comparisons in this study. However, official status measures have also been obtained and used.

Hindelang, et al. (1981) developed and validated a 59 item self-report measure of delinquent behavior, which they have administered to approximately 7000 adolescent subjects. The self-report was

validated against parental reports, victim reports, followup interviews with randomly selected subjects, official records, and delinquent behaviors reported by friends and siblings. Test-retest correlations of .83 to .92 were obtained over a one week interval. Hindelang et al. (1981) varied testing conditions in several ways, including anonymous versus non-anonymous reporting and written versus verbal reporting, and found that level of delinquent behaviors reported did not vary significantly in relation to the condition of testing. Their development of a validated standardized instrument provides a solid base for utilizing self-report of delinquent behavior for research.

The shortcoming of self-report measures due to the relatively high proportion of reports of minor delinquent behaviors, can be overcome by analyzing self-reports in terms of seriousness of delinquent behavior reported as well as total number, as has been done in the present research project. In fact, there are three methods of classifying delinquent behaviors relevant to use of self-report measures, but the relative merit of each method, as well as the interrelationships of the three methods are unclear and relatively unexplained.

The first method is to measure delinquent behavior as a simple frequency count, by summing subject responses across a variety of behaviors and accumulating a grand total of delinquent behavior. This measure provides a means for comparing relative rate of delinquent activity between subjects, but is susceptible to an undue emphasis on

minor but frequently committed delinquent acts such as drinking or truancy, such that someone reporting taking a drink five times would receive the same score as someone reporting raping five times. Also, someone who drinks each week of the year, receiving a total score of 52 for delinquent behavior over a one year period, is not differntiated from someone who drinks a bit less often, but engages in other delinquent behaviors.

The second method of categorizing self-reported delinquent behaviors is according to legal seriousness (status, misdemeanor, felony) or by ratings of the offensiveness of the offenses (i.e. burglary is more offensive than simple theft). Categorizing behaviors according to seriousness can help differentiate those engaged in relatively minor acts from those committing serious offenses. However, the law is often unclear about the relative seriousness of different delinquent acts. Second, most delinquents don't specialize, and those committing serious felonies often report frequent misdemeanors and status offenses as well (Wolfgang et al., 1972). Therefore, categorization of subjects into levels of seriousness of reported offenses can be difficult. The approach used here is to categorize subjects by most serious offense reported. If the most serious offense reported was a status offense, then the subject was classified as a status offendor. If the most serious offense was a serious felony, then the subject was grouped in that category. Five categories were used in the present research; no offenses reported, status offenses only, misdemeanor(s), "minor" felonies (e.g. used cocaine, bought something

you knew was stolen), "serious" felonies (e.g. beat someone so badly they probably needed a doctor).

The third method of categorization of delinquent behavior is by how specialized or varied a given subject is in his delinquent behavior (does a subject report only property crimes, or is he reporting status, property, and person offenses). As mentioned above, few delinquents specialize (Wolfgang et al., 1972). Wolfgang et al. report that the most serious delinquent were involved in the most varied delinquent behavior. They and others (West & Farrington, 1973; Bursik, 1981) contend that diversity of types of delinquent behavior may be useful for differentiating subjects at-risk for serious delinquency. Loeber (1982) reports that among a sample he studied, 50 percent of the 9-16 year olds who reported frequently engaging in thefts and fights, had three or more police contacts, whereas, only 4-7 percent of those reporting either frequent thefts or fights, but not both, had three police or more contacts. Loeber (1982) suggest that this finding shows that those committing a variety of offenses are at an increased risk of becoming chronic offendors. Additionally, as one goal of delinquency identification efforts is to tie specific behavioral patterns to specific etiologies, studying the relationship between predictor variables and specific types of delinquent behavior is one means for reaching that goal.

All three methods of categorization have construct validity and possible utility for identification research, but their relative merits have not been explored. As the present research is

exploratory, self-reported delinquent behavior was analyzed by all three methods of categorization, and the efficacy of these three methods compared.

Sampling and Interpetation Errors

The third type of common methodological flaw that has limited the usefulness of research on identification and prediction of delinquency has involved sampling and interpetation errors. Three common errors can be identified; the reliance on retrospective reports, the reliance on matched groups, and the use of institutionalized delinquents to represent all delinquents.

Reliance on Retrospective Reports

Delinquency identification research, like many other areas of prediction research, has relied on retrospective data to identify the predictors of delinquency (Robins, 1979), which may have led to an overemphasis on variables that have little predictive utility and causal influence. The limitations of retrospective reports have been examined by Kohlberg, LaCrosse, & Ricks (1972) and Robins (1966), who have shown that many predictors of adult mental health culled from retrospective reports, when tested by follow back or prospective methods, do not have the discrimnative or predictive capability they were thought to have. For example, Sameroff (1977), using the presumed causal relation between anoxia and minimal brain dysfunction as an example, has demonstrated that statistical relationships based on retrospective reports, are rarely confirmed by prospective analyses.

In his example he had followed a sample of children suffering anoxic spells at birth, which is thought to be a cause of minimal brain dysfunction, based upon its prevalence in the early histories of children showing characteristics of minimal brain dysfunction. However, he found that although anoxia was prevalent in the histories of children with minimal brain dysfunction, only a small percentage of children suffering anoxia later exhibit characteristics of minimal brain dysfunction. Although retrospective data suggest anoxia is causally related to minimal brain dysfunction, prospective data suggest it does not regularly cause minimal brain dysfunction characteristics, and that the influence of anoxia on the occurence of minimal brain dysfunction may be effected by other variables. Sameroff (1977) cautions against inferring causality simply because a statistical correlation exist between a condition and an antecedent event. Actually, the event's importance as a cause may be limited, and intervening events may mediate the effect of the presumed causal event. Presumption of causality based on retrospectively derived correlations, can prohibit proper consideration of the importance of multiple variables in producing an end condition (Bry, McKeon, & Pandina, 1982).

Applying Sameroff's observations to delinquency identification, reliance on variables identified by retrospective reports, can lead to erroneous inferences about the cause-effect relationship between the variables identified by this method and delinquent behavior, including overestimating the importance of that variable in the development of

delinquency. For example, coming from a divorced family has been correlated with delinquency (Andrew, 1981). However, divorce is not uncommon in the histories of nondelinquents and the actual effect that this event has on the child, and their later level of delinquent behavior can depend on the age of the child when the divorce occurred, the circumstances of the divorce, the post-divorce adjustment of the parents, and what other resources are available to the family (Hetherington & Martin, 1979).

Also, delinquency identification research can produce erroneous results by basing predictive scales on variables drawn from retrospective data. For example, Glueck & Glueck (1950, 1962) developed a predictive table for delinquency based on retrospective data. They matched 500 adjudicated delinquents with nonadjudicated counterparts, from the same geographic area, the same age, and of similar intelligence level. They interviewed the subjects, and reviewed their school and police and court records. They found five background factors differentiated delinquents from their nondelinquent counterparts; discipline of boy by father, supervision of boy by mother, affection of father for boy, affection of mother for boy, and cohesiveness of the family. The Gluecks developed a predictive table based upon these five factors. Subjects were rated for adequacy on each item as determined subjectively by the rater. Rating scores for each item were weighted by the percentage of the original sample that had been rated at a given level of a category, that were delinquent. For example, cohesiveness of family could be rated marked, some, or none. Since

61.3 percent of the subjects receiving the rating of some family cohesiveness were delinquents, all subjects receivng a rating of some cohesiveness were given a weighted score of 61.3 for family cohesiveness. Similarly, for predictive studies, a subject from a family rated as having some cohesiveness received a score of 61.3 for family cohesiveness. The psychometric problems of such a scale aside, the application of observations derived from retrospective data such as was done here, often leads to erroneous expectations. In a cross validation study of the table, Weis (1974) found that although the table correctly identified 92 percent of the future delinquents, it also identified 77 percent of the nondelinquents as future delinquents. Some of this inaccuracy may have been due to poor psychometric methods, but also, it is likely that part of the problem was due to reliance on retrospectively indentified differences. Simply applying a characteristic that was found to be prevalent in the background of delinquents will not ensure that the variable is a good discriminator of delnquency or that it has use as a predictor.

However, researchers have to begin somewhere, and it is logical to examine the end condition one hopes to predict as a primary step in developing a predictive scale, and to consider variables that correlate retrospectively as meriting consideration as predictors. But what is necessary, is to investigate the actual discriminative and predictive capability of such variables. To date this has been rarely attempted, and other methodological problems have limited the efforts to do so (Glueck & Glueck, 1962). However, with appropiate control of

other methodological problems sound progress is possible (i.e. use of self-report of delinquent behavior rather than official statistics, use of a normal sample rather than an institutionalized populations).

Use of Matched Groups

Two studies that became the models for many delinquency identification projects relied on comparison of institutionalized delinquents and an equal number of nondelinquent controls, matched for several major characteristics (Glueck & Glueck, 1950, 1962; McCord et al., 1959). Unfortunately, such an approach is susceptible to several flaws that seriously limit its utility. The primary flaw, that the population is equally composed of 50 percent adjudicated delinquents and 50 percent nondelinquents, and therefore, has a base rate of delinquency much greater than that found in the general population. The increased prevalence of delinquency (adjudicated delinquents) is likely to produce inflated estimates of the predictive capability of any scale derived from such a sample population (Wedge, 1978; Weis, 1974). For example, Jesness (1972) developed a scale that can correctly identify 87 percent of the true positives among a sample where the base rate is 50 percent. However, if the base rate is reduced to five percent (the estimated national prevalence rate for adjudication; Perlman, 1970), only 26 percent of the true positives will be identified by the scale (Wedge, 1978).

In addition to this problem, reliance on matched groups may distort the importance of identified variables for discriminating delinquent from nondelinquents in the general population. Variables

that are very discriminative in the matched groups may be less important in the general population. Or, by matching the delinquent with controls on several variables, one may eliminate the discriminative contribution of these variables to predicting delinquent behavior in a general population. Also, finding a control sample that is matched with a sample of adjudicated delinquents on several variables could result in finding a control group that is quite unusual, particularly if the matched variables covary with delinquent behavior among the general population. The control group, used to represent normals, would have a good possibility of being quite unrepresentative of most nondelinquents. These problems severely limit the utility of findings that use matched samples of delinquents and nondelinquents. This is particularly true when the population used to represent delinquents is a sample of institutionalized delinquents.

Use of Institutionalized Delinquents

Prior to the introduction of self-report methodology, delinquency researchers identified delinquents by official status, with institutionalized delinquents serving as the most readily available subject population. Therefore, institutionalized delinquents served as the subjects for much of the research in delinquency identification. But, as self-report data (Wiiliams & Gold, 1972) and studies of influences on adjudication dispositions (Howlett, 1973) have shown institutionalized delinquents are not representative of most adolescents exhibiting delinquent behavior. Institutionalization is an end state of a long complex, and apparently bias process. Institutionalized delinquents

may represent a population of interest to some researchers, and studies of institutionalized delinquents may provide some useful information for discriminating transient delinquency from prodromal criminality. But, for development of basic models for identifiying delinquent by level of delinquent behavior, subjects from the general population would provide more accurate estimates of the relative prevalence of variables of interest among delinquents and nondelinquents. In particular, as the primary intent of most early identification projects is to differentiate subjects prior to serious delinquency and adjudication, use of institutionalized delinquents as the sample is not appropiate.

Implications of Methodological Issues

As this review highlights, several methodological problems have limited the efficacy of delinquency identification research. These limitations have effectively rendered many of the previous findings questionable or of little use. Use of sounder and more sophisticated methodologies, in particular use of self-report data to measure delinquent behavior, reliance on normative samples, and less reliance on retrospective reporting, are necessary to overcome these limitations and produce more reliable and valid results. Additionally, some clarification of the interrelationship between methods of categorizing self-reported delinquent behavior and the relative merits of each categorization method is needed.

CHAPTER III

CRITICAL VARIABLES TO CONSIDER IN UNDERSTANDING THE CAUSES OF DELINQUENCY

Numerous variables have been studied in relation to delinquency. Recent reviewers (Andrew, 1981; Empey, 1978; Johnson, 1979; National Institute for Juvnenile Justice and Deinquency Prevention, 1977) concur that five categories of variables have been commonly considered in formulating theories of delinquency; 1)individual psychopathology or deficiency (Aichorn, 1936; Freedman, Rosenthal, Donahoe, Schmidt, & McFall, 1978; Halleck, 1967; Offer, Marohn, & Ostrov, 1979; Ollendick & Herson, 1979; Peterson, Quay, & Tiffany, 1961; Sarason & Sarason, 1981; Spence, 1981), 2)problems in school functioning and learning (Andrew, 1977; Hirschi & Hindelang, 1977; Lane, 1980; Murray, 1976; Phillips & Kelley, 1979; Reiss & Rhodes, 1961), 3)family dysfunction (Glueck & Glueck, 1962; Hetherington, et al., 1971; Jacob, 1975; Lewis, Shanok, & Balla, 1981; Nye, 1959), 4)peer/subculture influence (Cohen, 1955; Feracutti & Wolfgang, 1973; Sutherland & Cressey, 1978), and 5)economic/social strain (Cloward & Ohlin, 1960). Each category emphasizes a different aspect of children's psychosocial development to explain the cause of delinquency. A review of the past research and theoretical writings on the relation between variables from each of the five categories and delinquent behavior is presented below.

Individual Psychopathology/Deficiency

Individual psychopathology/deficiency variables place primary emphasis on problems within the individual as the basis for delinquency. Psychodynamic and behavioral explanations have been the two predominant approaches to explaining delinquent behavior as due to individual differences. The former approach considers delinquency to be due to problems in the psychosexual development of the individual, while the latter considers learned maladaptive behavior patterns to be the basis for delinquency. Each approach has generated a substantial body of research and theory.

Psychodynamic Approach

Early psychodynamic formulations of delinquency postulated that delinquent behavior is related to unconscious guilt feelings derived from early severe parental punshment (Aichorn, 1936; Alexander & Staub, 1931). Within this view, the delinquent act is interpeted as an attempt to get caught and be severely punished by a parent surrogate, which serves psychically to reestablish the desired relationship with a caring mother.

Extending the conflict model, Johnson & Szurek (1952) suggest that a child's delinquent behavior is actually motivated by a parent's unconscious wish to act out against society. Thus, from this view, the child acts out repressed parental desire, with the parent's unconscious approval. From a similar prospective, Anna Freud (1965) conceptualized delinquency as the result of a general breakdown in the

socialization of the child, due either to poor parental models, or to failure to internalize parental and societal morality.

Blos (1966, 1967) and Redl (1966) shifted the emphasis from conflict and superego development to viewing delinquency as due to impairment in ego development. Blos (1967) suggests that delinquency is one result of difficulty in psychological separation and individuation of the child from the mother. As a consequence, self and parental internal object representations are not sufficiently differentiated. From this perspective, delinquency represents an impulsive attempt to differentiate oneself and reduce engulfment anxiety.

Jesness (1962) developed a typology of delinquency based upon ego strength. In this work, ego strength is defined as the relative ability of the subject to delay gratification and to consider the needs of others. Based on responses to a sentence completion test and a structured interview, subjects are classified by I-level (ego strength). Jesness (1962) suggests that different levels of ego strength result in different types of delinquent activity. For example, an impulsive thief is classified at a lower I-level, because his behavior is motivated by a infantile self absorption and need for immediate gratification, whereas, a child who runs away because of an internal conflict about how to please his parents would receive a higher level classification, as he exhibits a relatively greater capability to delay gratification and take into account the needs of others. In addition, to the hypothesis that different levels of ego strength result in delinquents types of delinquent behavior. Jesness (1971) suggests

that delinquents at different I-levels benefit from different treatment approaches. Continuing with the example of the impulsive thief and the runaway, Jesness would suggest that the runaway would benefit from insight or personal growth oriented therapy to work through the underlying conflict, whereas the impulsive thief would be better served by a behavior modification program to quickly diminish his antisocial behavior(s). In a test of this hypothesis about differential treatment needs, Jesness (1975, 1976) compared subjects who were assigned to treatment programs according to their I-level, with those were simply assigned to probation counseling. Subjects from the prescriptive treatment condition had a lower recidivism rate for the first year post-treatment, but the difference in effect diminished over time, so that a two year follow-up found no significant difference in recidivism between treatment and controls. Other examinations and applications of Jesness's typology have not supported its use in differentiating delinquents or directing interventions (Warren, 1969; Wedge, 1978). Despite its lack of effectiveness, this typology has been influential on psychodynamic conceptions of delinquency, as this approach shifted the emphasis from due to internal conflict and early trauma, to considering delinquent behavior one manifestation of a pathological character style (Shapiro, 1965).

Offer, et al. (1979) extended this approach, in their study of 55 hospitalized delinquents. They concluded that delinquency is a manifestation of one of four character disorders which they labeled the impulsive delinquent, narcissistic delinquent, the empty

borderline delinquent, and the depressed borderline delinquent. Each character disorder is due to a somewhat different psychodynamic make-up, but all are considered longstanding behavioral and cognitive styles that impair psycosocial functioning. Offer et al. (1979, p. 51) summarized the four types as;

1. The impulsive delinquent shows more violent and nonviolent antisocial behavior than do delinquents representing the other types. He is considered quite disturbed by the therapist, socially insensitive by his teachers, and unlikeable and quick to act by most hospital staff members. Yet he seems to have some awareness of his need for help. His delinquency derives from a propensity for action and need for immediate discharge.
2. The naricissistic delinquent sees himself as well adjusted and not delinquent. Parents and staff, however, recognize his difficulties in adapting and characterize him as resistant, cunning, manipulative, and superficial. He denies problems, only makes an appearance of engaging in therapy, exaggerates his own self-worth, and through his delinquency, tends to use others for his needs, especially to help regulate his self-esteem.
3. The empty borderline delinquent is a passive, emotionally empty, and depleted youngster who is not well liked, is sometimes an outcast, at other times is needy and clinging, and seems pessimistic about the future. These adolescents behave delinquently to prevent psychotic disintegration or fusion, and to relieve themselves of internal desolation.
4. The depressed borderline delinquent shows initiative in school, is liked by the staff, and tries to engage therapeutically with staff members. Relationships with parents lead to strongly internalized value systems; these delinquents show a considerable amount of guilt and depression from which delinquent behavior serves as a relief; but they also show an anaclitic need for objects to which they cling and for which they hunger. They also lead to strongly internalized value systems, and these delinquents tend to show structuralized or neurotic coflicts from which, again, delinquent behavior serves as a relief.

Offer et al. (1979) note that these character types rarely develop in pure form, but many delinquents can be classified in one of the four categories. The categories are thought to be useful for selecting a therapeutic approach and for making prognostic inferences.

For example, depending on the delinquent's character type, how directive and structured the therapy is can vary. Offer et al. (1979) developed their typology based on a small sample of hospitalized delinquents. Subjects were not referred to the program randomly, and it is likely they represented a sample that exhibited extreme emotional distress and behavior problems, and consequently, they are not representative of the general population of delinquents. Also, their typology is based on factor analyses of a very large battery of cognitive tests, self-reports, projective tests, and behavioral reports. Such a thorough examination is plausible when subject mobility is limited (due to the inpatient settng), but is too unweilding to support direct application in a less controlled setting. Additionally, the number of variables examined in comparison to their small sample could have yielded erroneous results (Cohen & Cohen, 1975). Application of their typology to a more general population with a lower ratio of variables examined to number of subjects would seem to be the needed next step. Such a step would probably require development of more succinct measures of the variables they are most interested in (cognitive style and behavior in psychotherapy). However, the typology is congruent with current diagnotic schemas and represents the prevalent psychiatric thinking about the relationship of character disorders and delinquent behavior.

Another character typology of delinquency was developed by Quay and his colleagues (Peterson, et al., 1961; Quay, 1964, 1966, 1977; Quay & Peterson, 1975), based upon patterns of endorsement of a list

of behavioral descriptors. Using factor analysis and comparing response patterns of institutionalized delinquents and nondelinquents, Quay and his colleagues, identified three groupings of delinquents;

1. socialized-subcultural delinquent; his delinquent behavior is ego-syntonic, and reinforced by a delinquent peer group or subculture that has values that conflicts with laws.
2. unsocialized-psychopathic delinquent; his delinquent behavior is motivated by a need for immediate gratification of any impulse, with little concern for the others' needs or his effect on others.
3. disturbed-neurotic delinquent; his delinquent behavior is due to internal conflicts and delinquent behavior represents an acting out of those conflicts, he is anxious about and feels guilty about his delinquency.

A fourth grouping, labeled inadequate-immature, has been identified from the research by Peterson, et al. (1961), but this type has been found to be no more frequent among delinquent than among the general population (Quay, 1977). Therefore, it has not been considered a delinquent character type. From research on differentiating these types, the Child Behavior Checklist (CBC, Quay & Peterson, 1975) was developed. The CBC has been used extensively in delinquency research. Quay (1977) reports that interrater reliability for the CBC has varied across studies, ranging from $\underline{r}$ = .22 for teacher-father ratings to $\underline{r}$ = .78 between parents. Test-retest reliability reported for a two week interval was $\underline{r}$ = .82. The CBC has been able to

differentiate institutionalized delinquents from nondelinquents, child clinic populations from nonclinic populations, and recidivists from nonrecidivists. However, these differentiations were all made postdictively, rather than predictively. Quay (1977) does not report on the predictive vailidity of the CBC. Also, there is a need to validate the CBC against self-reported delinquent behavior. The CBC was developed using institutionalized delinquents as the criterion group, application to more general delinquent populations would be better supported by evidence that the CBC differentiates delinquents based on self-reported delinquent behavior. Despite these limitations, Quay's typology and the CBC, may be most useful in identification efforts. The CBC, despite its weaknesses, is the most researched delinquency discrimination scale presently available. Further examination of the utility of the character types described by Quay (1977) for directing identification efforts and prevention programming is needed.

There is other evidence that individual character contributes to level of delinquent behavior. Robins (1966) reported that the best predictor of an adult diagnosis of character disorder was behavioral aggressiveness as a child. Childhood behavioral aggressiveness has been considered a precursor to delinquent behavior (Loeber, 1982). Patterson (1976, 1981) has reported that aggressiveness level is sufficiently constant over time to be considered a trait, and that those children who exhibit aggressive behavior at younger ages exhibit delinquent behaviors (i.e.stealing) more often in later years than

their nonaggressive peers. However, Moore, Chamberlain, & Mukai (1979) reported on a comparison of children seen in a clinic for stealing with those seen for aggressiveness and a normal group,. In followup, two to nine years post treatment, they found that while 77 percent of those seen for stealing had been adjudicated for criminal offenses, only 21 percent of those seen for aggressiveness and 13 percent of the normal children had been adjudicated. However, 62 percent of the stealers had been referred by juvenile court, while few of the aggressive children were referred by a legal authority. Thus, it is likely that the effect found may have been influenced by a differential probability of recidivism for first time offendors versus those already committing an offense (Wolfgang et al., 1972). So the study's findings may have limited implications. On the other hand, it may imply that early stealing is a critical variable in the development of delinquent behavior. West & Farrington (1973, 1977) found that the single best predictor of delinquency was a rating of "troublesome" by one's teacher during childhood. Glueck & Glueck (1962) report that delinquents were more often rated as problematic during their childhood that their nondelinquent counterparts.

Another problem that can hinder research considering individual character and character disorders as an influence on delinquent behavior, is the psychodynamic presumption that character is not fully formed until adulthood. According to this thinking then, children cannot, because of their age be character disordered (Achenbach, 1982). Instead anyone below the age of 18 is considered a conduct

disorder. This presumption has been heavily criticized by researchers (Rutter & Shaffer, 1980) and practicioners (Group for the Advancement of Psychiatry, 1966) as naive and semantic quibbling. However, strict adherents to psychodynamic theory cannot accept the concept of character disorders in children. The practical impact of this theoretical issue on reliance on individual chartacteristics as predictors of delinquent behavior is negligble.

In sum, there is some evidence that individual characteristics, may contribute to the development of delinquency, and this behavioral tendency may be evident by mid-childhood. Also, there is evidence that character typologies may provide useful discriminative categorizations of delinquents. However, the actual basis for how character effects delinquent behavior is not clear. Whether it is due to impaired ego development as postulated by some psychodynamic writers (Offer, et al., 1979), or is a response tendency that is accentuated or modified by environmental reinforcers as postulated by social learning theorists (Loeber, 1982; Patterson, 1981) is not discernable at this time.

Most of the research taking a psychodynamic view of delinquent behavior has been descriptive excepting studies by Offer, et al. (1979), and Quay and his colleagues (Quay, 1977). Therefore, few of the constructs used in psychodynamic explanations of delinquency have been empirically validated. Second, the typologies derived through research (Offer, et al., 1979; Quay, & Peterson, 1975), have been developed on institutionalized populations, and so may have limited

applicability to noninstitutionalized delinquents. Third, most treatment programs based on psychodynamic concepts have reported negative or equivocal results (Romig, 1978; Wright & Dixon, 1977). Some basic normative sampling, to test the validity of character typologies and their related scales is needed. Also, presuming some version of Quay & Peterson's or Offer et al.'s character typologies can show validity and utility as a means for identifying and predicting delinquency, they are expected to be only one variable influencing whether or not delinquency develops. How individual characteristics interact with other influences on delinquency may provide the most useful information.

Behavioral Approaches

Similar to psychodynamic theory, behavioral approaches typically focus on the individual as the primary determinant of delinquent behavior. However, in contrast to the psychodynamic model, the behavioral approach does not emphasize character disorder, but rather reinforcement hsitory and social and physical reinforcers that maintain delinquent behavior.

Two formulations of delinquent behavior were developed early on. The first considered delinquent behavior to be due to the reinforcement of deviant behavior patterns by parents and peers. Delinquency was simply another behavioral response elicited by and maintained through operant conditioning (Bandura & Walters, 1963). This basic and general formulation has been criticized recently as to simplistic to aid in directing intervention efforts (Davidson & Seidman, 1974;

Stuart & Lott, 1972). Also, as the importance of covarying behaviors, contrast effects and interactions from multiple reinforcement schedules have been recognized, simple application of operant techniques to explain or treat delinquency has become less popular (Burchard & Harig, 1976).

The second early behavioral formulation attributed delinquent behavior to a constitutional difference in reactivity to punishment and reinforcement among delinquents compared to the normal population. This hypothesis was developed as an outgrowth of findings that many operant programs had only temporary or slight effects on chronic criminals and delinquents (Burchard & Harig, 1976). It was hypothesized that the limited effect of the programs was due to a lack of reactivity to punishment and other traditional reinfrocement techniques, so therefore, criminals could not "learn" new behaviors in such programs. This hypothesis has not been supported as an adequate explanation of limited effectivness by subsequent research. Bandura & Walters (1963) pointed out that behavioral change requires that a subject have alternative behaviors in his/her repetoire to replace those suppressed through punishment. They criticize many early training programs for presuming that delinquents have the desired behaviors in their repretoires. Also, the lack of reactivity hypothesis fails to consider that contextual cues often effect generalization of behavioral interventions (Patterson, 1976). As most operant training programs with delinquents and criminals were carried out in institutionalized settings, generalization beyond that setting is limited. Thus, the

conclusion that delinquency can be explained as a lack of reactivity to punishment is simplistic and misleading.

Two other approaches have emerged as the primary behavioral explanations of delinquent behavior; social skills deficits (Emshoff, Redd, & Davidson, 1976; Freedman et al., 1978; Gaffney & McFall, 1981; Gilchrist, 1981; Ollendick & Hersen, 1979; Pentz, 1980; Sarason & Sarason, 1981) and maladaptive family interaction patterns, often referred to as coercive traps (Patterson, 1976, 1982; Wahler, 1976).

Social skills approach. Social skills has been defined by Rinn & Markel (1979, p.108) as;

> A repertoire of verbal and nonverbal behaviors by which children affect the responses of other individuals (e.g. peers, parents, siblings, and teachers) in the interpersonal context. This repetoire acts as a mechanism through which children influence their environment by obtaining, removing, or avoiding desirable and undesirable outcomes in the social sphere. Further, the extent to which they are successful in obtaining desirable outcomes and avoiding or escaping the undesirables ones without inflicting pain on others is the extent to which they are considered 'socially skilled'.

As this definition explains, social skills theory considers behavioral problems to be due to the inability to cope effectively with interpersonal relatonships, because of a deficit in socially acceptable behaviors in the person's repetoire. Delinquency, is considered one outcome of a deficit in social skills. Such deficits are the result of poor training, and subsequent reliance on inadequate manners of self expression and social behaviors. Treatment focuses on training adaptive responses to social cues and transfer of trained skills to other situations (Pentz & Tolan, 1983). The social skills

conceptualization of behavioral problems has been applied to delinquents by many researchers. Freedman et al. (1978) compared institutionalized delinquent boys with two groups of nondelinquent adolescent boys. When presented with a series of awkward social situations, delinquents presented less adaptive reponses and were less able to specify their plan of action. Gaffney & McFall (1981) compared delinquent girls and a nodelinquent control group for social skills as measured by a behavioral role play measure. Similar to the results reported by Freedman et al. (1978), they found that the delinquents tended to give less adaptive responses and were less capable of obtaining a satisfactory resolution to a problematic social interaction. Spence (1981) compared institutionalized delnquents and nonoffendors from the same socioeconomic and geographic background. Subjects were given a mock job interview and rated for social skills. Raters were not told which subjects were from the delinquent group, and which were from the controls. Spence found that the delinquent subjects mantained less eye contact, fidgeted more during interviews, gave less satisfactory answers to questions, were considered less friendly, and were rated as less likely to be offered employement. As these studies evidence, a difference in level of social skills in adjudicated delinquents and nonoffendors can be demonstrated. However, since the delinquents studied in each of these projects have been institutionalized delinquents, the generalizability of their findings to the noninstitutionalized delinquent population is questionable. Illustrative studies of applying social skills training to less

seriously delinquent populations may clarify how general the relationships between social skills and delinquent behavior is.

Sarason & Ganzer (1973) randomly assigned 192 first offendors, referred to a court diagnostic center, to either a social skills training program of modeling, behavioral rehearsal, and feedback, or to a control group that received the center's standard program of interviewing and counseling by a caseworker. Treatment subjects showed increased social competency after treatment from that exhibited pretreatment. Second, subjects who had received the social skills training, were rated more favorably by the staff of the diagnostic center. Third, treatment subjects received more favorable dispositions at their court hearings. Sarason & Ganzer (1973) indicate that these results suggest that social skills deficits is a plausible explanation for delinquent behavior. They hypothesize that as social skills increase, social acceptance and functioning increase and therefore, less adaptive behaviors such as delinquent behavior will diminish. More specific conclusions seem indicated by their data, than those they infer. It seems this data shows that official status may be correlated to social skills. Those delinquents with relatively less social skills may be more likely to function less adaptively during juvenile hearings, and therefore receive more formal or serious dispositions. However, the findings are not evidence that delinquent behavior decreased as a consequence of social skills training. The finding of a difference in disposition, does not necessarily indicate a difference in delinquent behavior.

The best example of a social skills study of delinquents that approaches normative sampling is a study by Filipczak & Wodarski (1979). They randomly assigned 415 ninth graders to one of four groups; family focused social skills training, academic focused social skills training, combined family and academic focused skills training, or a no-treatment control. The arrest rate of these four groups was compared post intervention with the community arrest rate for children of the same age range. In a one year followup, subjects who had received any type of social training had a arrest rate below the normal rate, whereas the control group's arrest rate did not significantly differ from the community rate. So, with a general population social skills seems to be correlated to delinquency (or at least arrest rates). Ganzer & Sarason (1973) argue for the need to examine the correlation between official status, level of delinquent behavior, and social skills. Although, such a study is not carried out in the present research, the relationship between self-reported delinquent behiavor and social skills self efficacy is measured.

Although social skills approaches have shown efficacy with a number of types of problems in social functioning among adolescent populations (Pentz & Tolan, 1983), the specific relationship between social skills and delinquent behavior needs further clarification. Most specifically, clarification of the utility of social skills level as a predictor of delinquent behavior is unclear. There is evidence that increased social skills can effect the likelihood of official

status as a delinquent, but whether deficits in social skills are one basis for delinquent behavior is still unclear.

Coercive interaction traps. The other prominent behavioral view is the emphasis on coercive or controlling interactions among families of delinquents (Patterson, 1976, 1982; Wahler, 1976). According to this hypothesis, aversive behaviors that normally drop out of a child's behavioral repertoire as more adaptive behaviors develop (i.e. infant's crying to get fed is replaced in childhood by compliant behavior and verbal request for food in childhood), are maintained by negative reinforcement. These behaviors or modified forms of the behaviors are relied upon far beyond the time when they are adaptive (Patterson, 1976). Exhibition of the behavior coerces the caretaker into gratifying the desire of the child, despite the undesireability of this. For example, a mother may request that the child sit in a chair. The child responds with whining, but remains out of the chair. Therefore, the mother insists that the child comply. The child begins to scream and throw a tantrum. In response, the mother gives up on her request in order to calm the child. The mother's giving up negatively reinforces the child's whining when given a directive, and therefore, increases the likelihood that the behavior will appear the next time a request is made. The mother and child are in a coercive trap. Additionally, such interactions often end with the child recieving physical and/or verbal affection, which can positively reinforce the behavioral sequence (Wahler, 1976). Delinquent behavior

is seen as a generalization of the coercive style of interacting to interactions with others outside the home (Loeber, 1982).

The coercive trap explanation of maladaptive behavior has had extensive support as a general explanation of aggresive behavior (cf. Patterson, 1982). Furthermore, there has been evidence that is useful for differentiating delinquents from nondelinquents. For example, Loeber (1982) reports that in a study of coercive behavior, interactions of families of delinquent and of youths who did not have arrest records were observed. Delinquents were found to display significantly more coercive behaviors than other family members, whereas in the nonoffendor families, the target youths exhibited less coercive behaviors than other family members. Also, in the delinquent families, the other family members more frequently acquiesed to the child's coercive demands.

The coercive trap explanation for the development of delinquent behavior merits cosideration in any identification efforts. It is based on methodologically sound research and its application to delinquency is documented (Loeber, 1982). It is congruent with another approach to delinquent behiavor which shows promise in delinquency identification; family functioning and interactions. In fact, the coercive trap approach may be considered a family systemic functioning explanation of delinquent behavior as easily as a behavioral approach. The major drawback to the coercive interaction approach is the present assessment method, which involves extended behavioral observations of the family, which is time consuming and can be quite intrusive and

reactive. So, this approach may hold more promise as a scientific interest, that can be the basis for devloping more utilitarian and less time consuming means of assessing family functioning measures than a directly applicable method for identifying delinquency. The study of coercive family interactions may provide important information about which critical variables in family interaction styles and systemic functioning contribute to delinquent behavior. Identified critical variables, when identified, would be useful to identification efforts.

Implications of Individual Psychopathology Research

The research focusing on individual psychopathology as the critical factor in the development of delinquent behavior suggests that three areas of research may hold promise for delinquency identification efforts; the character type approaches of Quay (1977) and Offer et al. (1979), the social skills deficit approach (Pentz & Tolan, 1983), and the family interaction/coercive trap principle (Patterson, 1982; Wahler, 1976). All three areas have been researched to some extent and there is support for considering each as a plausible understanding of the role of individual characteristics in delinquent behavior. Exploratory research that considers these approaches is needed to determine, which if any, of these is most useful. To that end, the present research has utilized a measure of individual emotional adjustment and a measure of social skills to test the importance on individual adjustment. The impact of coercive traps are likely to be tapped by the family systemic measures.

Problems in School Functioning and Learning

A second critical factor of interest and study in the delinquency research has been school functioning (cf. Empey, 1978; Murray, 1976). School functioning usually is considered to be composed of two more specific variables; academic performance and social functioning within the school. Both are considered to have distinct but related roles in the development and expression of delinquent behavior.

Academic Performance

Research has been conducted to examine two major hypotheses linking academic performance and delinquency. The first hypothesis is that the same intellectual deficiencies (either a general limitation of intelligence or a specific learning disability) that cause academic failure may also limit social and vocational competency (Berman & Siegal, 1976). Delinquent behavior is one outgrowth of a general social incompetency. The second hypothesis is that poor academic performance results in mislabeling of the child as poorly motivated and he/she is treated as a disciplinary problem. The child is grouped with other children who are labeled as behavior problems. The increased association with delinquent prone peers, and the ongoing treatment by teachers and staff of the child as though he/she was delinquent prone, facilitates development of delinquent behavior and a delinquent identity (Burns, 1971; Elliot & Voss, 1974; Lane, 1980; Rankin, 1980). A brief examination of each hypothesis and the related research indicates both hypotheses have serious shortcomings.

Deficiency hypothesis. As mentioned above, this hypothesis proposes that delinquent behavior is due to some extent, to intellectual deficits, either a general limitation of intelligence or a specific learning disability. According to this hypothesis, children with such intellectual limitations are more likely to misread social cues, act impulsively, and transgress social and legal convention due to inadequate understanding (Berman & Siegal, 1976). Further, this hypothesis suggests that these children are less reactive to social sanctions such as verbal reprimands and rewards such as recognition for academic achievement. As the usual sanctions are less influential on these children, they are more likely to partake in antisocial behavior (Jacobson, 1974).

Although several studies have correlated a general intellecutal deficiency and/or academic performance with delinquency (Ganzer & Sarason, 1973; Glueck & Glueck, 1962; Hirschi & Hindelang, 1977; Laulicht, 1963; Mednick & Christianson, 1977; Weis, 1974; West & Farrington,1973; Wolfgang et al., 1972), many of the studies have found only moderate level correlations. Also, these correlations were often reported without due regard to the limitations in applying many intelligence tests and standardized academic tests to subjects from minority groups and lower socioeconomic status groups, who are often a large portion of the sample used in these studies. If reported official status effects (Williams & Gold, 1972) are considered, the evidence seems stronger for a relationship between official status and intelligence than between intelligence and delinquent behavior. For

example, Hirschi & Hindelang (1977) found IQ to be among the best correlates of having a police or court record. West & Farrington (1973) found that 28.4 percent of the quarter of his sample with the lowest IQs were among the most delinquent (as measured by official status), as compared to 16.6 percent of the remaining three-quarters. Jensen (1976), in a reanalyzation of the cohort data from a study by Wolfgang et al. (1972) reported that achievement test scores correlated significantly with official records of police contacts. But, Weis (1974) found that subjects with IQ scores above 110 were half as likely as those with IQs of less than 100 to have high scores on a self-report measure of delinquent behavior, providing some support for relating delinquent behavior level to general intelligence level. Hindelang, et al. (1981) found that a brief test of general knowledge correlated to official status (Gamma = -.22) better than to self-reported delinquent behavior (Gamma = -.15). They caution that their general knowledge test was a crude measure and consider the implications of these correlations limited. In the same study they found a negative correlation between grade average and delinquent behavior for white males and females, and black females, but a negligible correlation (Gamma = -.05) for black males. They suggest that the relation between academic performance and delinquent behavior may not be direct, but rather one influence among many on level of delinquent behavior. The relative influence is effected by several other variables (i.e. SES, race, family functioning). Other evidence

in support of this view of a link between judgement about academic performance and delinquent behavior has been found.

Hirschi (1969) reports that a subject's self rating of academic competence was significantly correlated (negatively) to delinquent behavior, whereas actual level of performance was not. Similarly, Rankin (1980) found that school failure (repeating one or more grades) was not correlated significantly with delinquency, but educational expectations and attitudes towards school were. Murrell (1974) suggests that the relationship between intellectual limitation and delinquency is mediated by several variables, in particular attitude toward school, parental behavior, and emotional state of the child. He concludes, that school performance per se, has limited use as a predictor of delinquent behavior, but that in interaction with other variables it may be useful. This is the perspective taken for the present research. Low intelligence level probably makes someone more at-risk for any number of problems. But, more importantly average or above intelligence does not prevent or preclude exhibition of delinquent behavior in any systematic fashion. The actual effect on development of delinquent behavior seems moderate, and the impact on a given individual is probably mediated by several other variables.

A smilar conclusion can be drawn from examining the literature relating a specific learning disability to delinquent behavior. The major impetus for this linkage has been the common finding that delnquent populations tend to score lower on the Verbal Scale than on the Performance Scale of the Wechsler IQ tests (Andrew, 1974; Manne,

Kandel, & Rosenthal, 1962; Mattarazzo, 1972). This difference has been interpeted as a deficit in conceptual capability among delinquents that is similar to the cognitive deficits demonstrated by many learning disabled children (Andrew, 1974; Berman, 1981). However, this of a difference in Scale IQs has not always been supported. Haynes & Bensch (1981) found that a lower Verbal Scale than Performance Scale score was no more prevalent among delinquents than among the general population. But, frequent offendors were more likely to have a lower Verbal scale score than one time offendors or the general public. Similar findings of a differentially low Verbal scale score have been reported by Hubble & Groff (1981).

Research utilizing test more specifically designed for identifying learning disabilities than the Wechsler scales, present results that are supportive of a learning disability-juvenile delinquency link. But this research seem particularly limited by poor methodology. For example, Hurwitz, Bibae, Wolff, & Rowbotham (1972) compared delinquents, learning disabled students, and normal controls on motor development and control tasks. They found that the delinquents and the learning disabled subjects had similar results, and both groups performed significantly poorer than the controls. Unfortunately, Hurwitz et al. did not control for IQ differences. The controls had a mean IQ of 118, while the delinquents had a mean IQ of 96; IQ of the learning disabled chidren was not specified but was called normal. This difference in IQ level between the controls and the delinquents could readily account for the differences found between these two

groups, and for the similarity between the learning disabled and delinquent subjects. Duling, Eddy, & Risko (1970) tested a sample of delinquents at a residential placement, and found that 32 percent presented test results that indicated some form of learning disability. Although Duling et al. differentiated specific learning disability from a general academic lag, they relied on nonstandardized tests and tests that are not commonly used for diagnosing learning disabilities (i.e. Draw-A-Man test). Also, their research has been criticized for using subjective criteria to categorize their subjects.

Berman & Siegal (1976) present the most thorough study, to date, on specific learning disabilities and delinquency. They administered the Halstead- Reitan Neurological Battery to institutionalized delinquents, and found that 56 percent scored in the impairment range on at least two subtests, compared to 18 percent of the control group of nondelinquents. Berman & Siegal contend their results suggest an organically based learning disability as one basis for delinquency. They hypothesize that the learning impairment effects conceptual and judgemental thinking. Berman (1974, p.43) concludes that failure to find these disabilities early; "sets into motion a devastating series of events that, for a large number of unfortunates, ends up in a reformatory or juvnile court."

The drastic conclusion that Berman draws is not supported by other research; however, neither is it refuted. Because of the lack of sound research on the relationship between learning disabilities and delinquency, the matter remains unresolved. A more likely

interpetation of this body of research, than those drawn by Berman (1974), is that the effect of a learning disability is as one more risk factor, that in interaction with other factors can increase the likelihood of delinquent behavior. A review of research related to the second hypothesis linking academic ability to delinquency also suggest that academic deficiency is most appopiately viewed, in relation to delinquent behavior, as one of many stressors that can increase the likelihood of delinquent behavior occurring.

Labeling due to limited academic ability. This second hypothesis about the relationship between academic performance and delinquency is a derivative of labeling theory (Rosenthal & Rubin, 1978). According to this hypothesis, a path toward delinquent behavior is begun when the child's academic limitations are labeled as volitional oppositionalism by school officials. Therefore, the child is treated as though they are a behavior problem, and are often placed in educational tracks with other problem children. Increased association with delinquent prone peers, and continuous treatment by teachers as though the academically deficient child was a behavior problem, firm up a negative self image. The child comes to regard himself as deviant and identifies with the delinquent subculture. Social and economic rewards are more available to him through delinquent behavior than through more legitimate paths (Burns, 1971; Lane, 1980).

There has been little research testing this hypothesis. Berry & Polk (1971) studied the relation of academic ratings and misconduct in school. They found that,. academic ratings fluctuated from year to

year for many students, and that misconduct seem to increase subsequent to decreased academic ratings, and decrease when academic ratings had increased. Based on these results, it appears that any labeling effects are transitory for most subjects. But, any conclusion based on this one study would be tenuous. As this study did not focus on the relation of labeling and delinquency, specifically. It is possible that delinquency is related to being labeled negatively in schools, and perhaps delinquents could be differentiated from peers due to early labeling as problematic. The question of whether the misbehavior causes labeling or the labeling causes misbehavior remains unanswered. Some light can be shed by the review of research on behavior problems in school as predictors of delinquency.

Social Behavior Within School

A common hypothesis of research which focuses on school functioning as a correlate to delinquent behavior, is that preadolescent and early adolescent students who experience social difficulties in school are more at-risk for subsequent delinquent behavior during adolescence (Murray, 1976). Glueck & Glueck (1962) reported that delinquents had experienced more problems in school than nondelinquents, including more disciplinary actions and more school failure. McCord & McCord (1958) and West & Farrington (1973) found early school behavior problems were correlated to later delinquency. Elliot & Voss (1974) followed a cohort of 2617 subjects from first grade through the ninth grade and found that those showing early behavioral and learning difficulties were more likely to drop out of school and to engage in

delinquent behavior. They suggest that although academic deficiencies was the reason for some dropouts leaving school (33%), and may therefore be related to subsequent delinquent behavior, most dropouts left school because of motivational or social problems. According to Elliot & Voss, early difficulties in social functioning in school is an indication of increased risk for delinquent behavior. In a related study, Elliot (1976) studied a group of dropouts and found that their delinquency rate decreased after dropping out of school. He suggests that once these subjects leave school, they are no longer constantly faced with failure and conflict with school authorities, so they are under less stres, and their delinquent behavior decreases. Also, according to Elliot (1976), once they drop out of school, they will no longer be reported for status offenses such as truancy or misbehavior in school. Simcha-Fagan (1979) found that poor school adjustment correlated to level of self-reported delinquent behavior. Wedge (1978) reports that studies that utilized teacher predictions of delinquency found low to moderate levels of accuracy. Hathaway & Monachesi (1957) found that teacher predictions were more accurate than those derived from a personality test (MMPI). But, teachers tended to underpredict delinquency for those children that had good grades or came from high socioeconomic groups. It appears that there is a moderate relationship between social problems in school and later delinquent behavior, and that problems in school may represent general problems in social functioning.

Implications of School Functioning Research

The research on the relation of school functioning to delinquent behavior suggest that social functioning within the school has utility as a predictor of future delinquency, to some degree. Academic capability seems to be a less directly correlated to delinquent behavior. It appears, that for identification research purposes, general limitations in academic skill or specific learning disabilities should be simply viewed as additional stressors that can increase the risk for delinquent behavior (Bry et al., 1982). As, to behavioral difficulties, the question of whether school behavior problems cause or enhance the likelihood of delinquency, or are merely earlier examples of a personality problem that later will result in delinquent behavior has not been clarified (Phillips & Kelley, 1979). Gold (1970) reports on two studies that show educational intervention can decrease the rate of delinquent behavior. Gold interpets these findings as evidence that school problems contribute directly to the development of delinquency. Although this controversy cannot be resolved at this time, these results suggest, at least, that school problems can be a stressor that increases the likelihood that delinquency will occur. School functioning certainly merits consideration in delinquency identification and prediction research. Monahan (1982) considers school functioning variables as one of the three factors most useful in delinquency prediction research. Wedge (1978) also, urges investigation of teacher ratings and other measures of school functioning as variables in multivariate predictive research. Also,

school provides a setting that allows for normative sampling, ready access to potential subjects, and potentially an excellent base for interventions. It seems likely that both academic capability and social functioning contribute to some extent to the occurence of delinquent behavior, and should be included in delinquency identification research, but their relative effect is likely to vary depending on other individual and family characteristics.

Family Dysfunction

The influence attributed to family variables is probably the most common thread throughout delinquency research. However, both families and deliniquent behavior are complex phenomena and different aspects can be measured in many ways. For this reason, and because of a large body of contradictory and confusing research, the actual relationship between family variables and delinquency remains unclear. To clarify the relationship and to aid review, family variables can be grouped into two categories. The first category, and the focus of most of the research to date, can be called structural variables. Structural variables refer to the framework of the family; the marital status of the parents and whether both parents are both present in the home (most studies focus on father absence; Ferdinand, 1964; Glueck & Glueck, 1970; Hetherington, Cox, & Cox, 1981; Herzog & Sudia, 1973; McCord, McCord, & Zola, 1959; Monahan, 1957; Robins & Hill, 1966; Shaw & McKay, 1942), birth order (McCord et al., 1959; Murrell, 1974; Schooler, 1972; Touliatos & Lindholm, 1980; Wilkinson, Stitt, &

Erickson, 1982), and family size (Andrew, 1976; Glueck & Glueck, 1968; Nye, 1959; Suther & Moan, 1973). The second category of family variables are concerned with the family as a system whose functioning correlates to delinquency, and can be labeled family functioning variables (Hetherington & Martin, 1979). Variables frequently emphasized from such a perspective include patterns of intrafamilial communication, conflicts and conflict resolution style, organization (how much the family structures their activities and responsibilities), control (what is the power distribution hierarchy in the family; how clear and set are rules for acceptable behavior), and adaptability (the family's ability to change rule's, roles, and interaction patterns in response to situational demands; cf. Okun & Rappaport, 1980; Tolan, et al., 1983; Walsh, 1982). Pertinent research in each of the two categories is reviewed below.

Family Structure

As noted above, research on the link between family structure and adolescent delinquency has typically focused on three primary variables; father absence, the birth order of the delinquent child, and family size. Each variable has been researched extensively, yet the relation of each to delinquent behavior, and therefore, their utility as predictors remains unclear.

Father absence. Reviewing early studies of the link between single parent families and delinquency, Monahan (1957) concluded that a broken home appeared to be the most influential variable in the

appearance of delinquency. However, he noted that the effect of father absence had not been established by sound research, but rather, by theoretical writings and clinical descriptions. Since Monahan's review, several researchers have noted a correlation between father absence and delinquency, but the correlations found have not held for all groups of delinquents. Glueck & Glueck (1962) report that father absence was more common among the failies of their delinquent subjects than the comparison group. However, they did not consider father absence a useful predictor of delinquency, but instead emphasized that the cohesiveness of the family (how much the family members liked being in the family) was more important in producing delinquency than father absence. Nye (1958) reported that father absence was significantly related to self-reported delinquency, but also concluded that the emotional atmosphere in the home is more influential than father absence. Reviewing the research on father absence and delinquency, Herzog & Sudia (1973) suggest that results have often been contradictory and confusing, so that the actual contribution of father absence to delinquency is difficult to accurately assess. Wilkinson (1974) suggest that emphasis on father absence as an important influence on delinquency seems to vary with trends in sociological and psychological research, creating a cycle of periods of research supporting father absence as a critical variable alternating with periods in which father absence is considered relatively unimportant. Despite the frustration expressed by these reviews, some clarification of how

father absence relates to delinquent behavior can be gleaned from the research.

First, it appears that father absence may be differentially related to delinquency among females and males. Ganzer & Sarason (1973) reported that father absence correlated to delinquency in females but not among males. Andrew (1976) found the same gender difference. Second, the recency of father's leaving, appears to influential on the level of delinquency measured (McCord, McCord, & Thurber, 1962). McCord et al. (1962) suggest that if the father left recently stress related to intrafamilial conflict in the time period preceeding the father's exit are more recent and probably more influential. McCord et al. (1962) further suggest that the emotional atmosphere and level of intrafamilial stress are more important influences on delinquent behavior than parental absence per se. Others have presented similar contentions (Glueck & Glueck, 1970; Hetherington, et al., 1981; Herzog & Sudia, 1973; Nye, 1959; Robins & Hill, 1966).

The third aspect of father absence that can be gleaned is that father absence seems to be more influential on delinquents who begin their delinquent behavior later, than on those who begin earlier. Robins & Hill (1966) report that, although father absence was correlated to delinquency among boys first reported as delinquent after age fifteen, for those first reported as delinquent prior to age fifteen, father absence was not related to delnquency. Fourth, the correlation between father absence and delinquency varies depending on

socioeconomic status. While father absence seems to be correlated to delinquency among middle and upper socioeconomic groups, it is not significantly correlated for lower socioeconomic groups (Eisner, 1966; Willie, 1967). This difference is may be due to a greater comparative economic dependence on the father in middle and upper socioeconomic group families, and, possibly to a lesser stigma related to father absence among lower socioeconomic status groups than middle and upper socioeconomic groups (at least at the time of Eisner's [1966] and Willie's [1967] studies). Fifth, father absence has been reported as more prevalent among delinquents arested for property crimes, than among delinquents arrested for other crimes (Ferdinand, 1964). Ferdinand (1964) reviewed records of 1292 delinquents and reports that father absence was more common among delinquents than among the general population, and that father absence is particularly frequent among those subjects that had been arrested for property crimes. Ferdinand also notes that for rural property offendors, father death seems related to delnquency, whereas, father absence due to divorce is more prevalent among urban property offendors.

These observations as a group, suggest that the effect of father absence on delinquency is dependent upon many other variables. Bloom (1978) has shown the negative impact divorce can have on a range of aspects of psychosocial functioning, and all other things being equal, divorce or other family disruptions is probably correlated to delinquency. However, it is rare that all other things are equal. It is likely the effect of divorce or other family disruptions will be

tempered or accentuated by other variables such as the emotional atmosphere prior to the father's leaving, and the social and economic resources available to the family, and the reason for the father's absence. Herzog & Sudia (1973) criticized research on the effects of father absence for lumping all types of father absences together and assuming all have equivalent effects on child development. They suggest at least differentiating father absence due to death as opposed to divorce. Support for their suggestion has been reported (Felner, Stolberg, & Cowen, 1975). Also, they suggest differentiating fathers who are absent periodically from fathers who are permanently absent. The contend that each type of absence is likely to differentially impact on the family, and therefore, valid research requires more specific differentiation of variables beyond whether or not the father is absent. Hirschi (1969) suggests that the importance of father absence for the development of delinquency may be best understood as one stressor that usually increases economic and psychological strain on the family, and therefore creates a greater likelihood of delinquent behavior in one of the children, as a reaction to increased stress.

As a whole the research supports Hirschi's (1969) remarks. Father absence is generally stressful, and therefore, in most cases it probably enhances the likelihood of delinquency. However, the actual impact of father absence may be better understood by direct measurement of family systemic functioning. Clearly, divorce can have negative implications (Bloom, 1978) for family functioning, but the

level of impact and the manner in which it impacts can vary from family to family. It is not father absence itself that is seen as crucial, but whether the father's absence makes the family system less adaptive, organized, or dysfunctional in some other manner.

Family size. Andrew (1977) reported that families with four or more children were overrepresented among delinquent families, compared to their prevalence among the general population. McCord et al. (1959) reported a correlation between family size and delinquency status. Murrell (1974) hypothesized that delinquents from large families were more poorly socialized and had less social resources to draw upon than delinquents from small families, and were therefore more likely to be officially delinquent, although their proclivity for delinquent behavior may be no greater than that of children from small families. Schooler (1974) criticized reports of a correlation between family size and delinquency, for their failure to control for socioeconomic status. As large families are more prevalent among lower socioeconomic groups, and official status has been shown to correlate to delinquency, Schooler contends that family size correlations may be due to socioeconmoic effects. In fact, when Touliatos & Lindholm (1980) controlled for socioeconomic status differences, they found that family size did not correlate to delinquency. But, as they measured delinquency by the Child Behavior Checklist (Quay & Peterson, 1975), and did not use any measure of actual delinquent behavior or status, their results have limited implications for ruling out family size effects.

The relationship of family size to delinquent behavior has not been researched very extensively, and this precludes drawing conclusions about its efficacy as a variable for delinquency identification. It seems that increased family size would create a greater economic strain, and limit the amount of interaction between parent and child. Yet, large families may have multiple income earners to provide emotional supports and a greater variety of resources for coping with stress. So it is difficult to speculate what effect family size has on delinquency. For that reason, family size has been included as one variable in the present research.

Birth order. Middle birth order children have been reported as more prevalent among delinquent children than are first or last born children (Glueck & Glueck, 1968; McCord et al., 1959; Nye, 1958; Stott, 1978). However, this finding has been criticized by Hirschi (1969) as misleading. He suggest that as family size increases the probability of being a middle child increases. As, family size has been correlated to socioceonomic status, which in turn has been correlated to offical status, Hirschi (1969) suggest that what birth order effects actually represent are socioeconomic effects on official status. In research that tried to control for family size and official status effects, Wilkinson, et al. (1982) compared subjects from same size families on self-reported delinquency and birth order. They found that birth order effects interacted with gender of subjects and of siblings. However, as Wilkinson et al. had to be very selective about subjects (in order to find subjects that had siblings of all one

gender, and to sample across first, middle, and last birth order positions), their results must be interpeted

Like family size, the methodological limitations of research on birth order and dellinquency, have prevented any clear conclusions. Two considerations argue against considering birth order to be an important influence in identification research. The first is that the average size of the family has decreased to slightly less than two children per family, so middle childrem will be less common in the future. Because of the lowered incidence of middle position children, and the almost uniform prevalence of one and two child families, the discriminative capability family size is likely to be limited. Second, birth order position is highly correlated to family size, and is reported to interact with gender of subject, gender of sibling, and socioeconomic status. Because of these interactions and correlations, it appears that the discriminative clarity that birth order can provide is negligible. However, like most of the other delinquency identification research, studies of birth order effects have been methodologically limited, and so the variables' utility can not be dismissed completely.

As these brief reviews of the three major family structure variables, studied in relation to delinquency identification suggests, family structure variables can provide some rough, but not too reliable means for accounting for some of the variance in delinquent behavior level. However, as our cultural norms change and divorce becomes more common and family sizes fairly uniform, the utility of

family structural variables may diminish. The impact of father absence, apparently the most useful of the three structural variables, may be more accurately be viewed as a stressor that can debilitate many family systems. However, it is likely that for some family systems the father's leaving, may actually decrease intrafamilial stress and tension, and therefore decrease the likelihood of delinquency. But, as in many other areas, research on family structure variables have been studied by methods that have significant limitations. Therefore, they should be considered for inclusion in identification research, because of the scientific interest in clarifying what specific effects different family structures can have, in interaction with other variables, on delinquent behavior, and because they are easy measures to obtain and further research may show them to be useful discriminators.

Family Functioning

Family interaction and systemic functioning have been areas of significant theoretical and research interest in the last twenty years (cf. Gurman & Kniskern, 1981). As this interest has developed and the relation of the family systemic functioning to disturbed behavior has been examined, interest in applying family system concepts to studying and predicting delinquency has increased (Tolan, et al., 1983).

A common principle among family systems theories is viewing deviant behavior as symptomatic of family dysfunction. From this view, delinquent behavior represents a maladaptive or disorganized family system (Ingram, 1972; Johnson, 1978). Haley (1980) suggest

that delinquent behavior is an attempt by the child to divert familial attention from marital tensions, by providing the parents a task that requires them to forego their own problems and ally to accomplish their parental task of coping with and helping their delinquent child. According to such a theory the delinquent takes on a role of the problem child, acting as a scapegoat. This behavior is oriented toward organizing a dysfunctional family system into a more adaptive interaction style and to focus attention away from actual intrafamilial tensions and difficulties (Johnson, 1978).

Research lends support to considering family functioning as an important variable in the development of delinquency. Nye (1959), in one of the earliest uses of a self-report measure of delinquent behavior, found that intrafamilial tension, and either too lax or too restrictive parental discipline was more prevalent among subjects reporting delinquent behavior than among those not reporting. Glueck & Glueck (1970) reported that the best means for differentiating delinquents from nondelinquents was several family functioning variables: overstrict or erratic discipline by the father, unsuitable supervision by the mother, indifferent affection by the father for the boy, indifferent or hostile affection of the mother for the boy, and lack of cohesiveness of the family. McCord & McCord (1958) noted that the disciplinary inconsistency and parental psychopathology correlated with higher rates of delinquency. In particular, an affectively cold mother and a criminal father were influential. Bennett (1960) reported that delinquents more commonly had antagonistic relations

with their parents than did nondelinquent neurotic adolescents. The consistency of these findings across studies lends credibility to including measures of family interaction in delinquency identification research. However, most of these studies relied on subjective measures of family functioning, such as estimating parental psychopathology by nonstandardized interviews. Also, most focused on subjects that were already identified as delinquents, and among such subjects, family functioning problems could be due to or exaccerbated by their legal difficulties (Davidson, 1975). Jacob (1975) noted similar difficulties throughout family interaction research. Additionally he criticized the field for not sufficiently controlling awareness among raters used in the research about which families in the studies included delinquents and which ones did not. Despite these criticisms, Jacob (1975) noted five trends in the results of reviewed studies, that suggest that families of delinquents could be differentiated from normal families: 1)families of delinquents tend to have greater frequency of parental disagreements during interactions, 2)less differentiation between parents' and children's influence on family decisions (families of delinquents tended to have equalitarian or child skewed power distributions, whereas normal familes tend to have hierarchical power distributions with parents having more influence than children), 3)less expression of positive affect and more expression of negative affect, 4)greater prevalence of misperceived communications, and 5)a larger proportion of

commmunications reflecting an unwillingness to compromise, than normal families.

Two other investigations of the relationship between family functioning and delinquent behavior, that utilized sounder methods and merit more specific review, are a study by Hetherington, et al. (1971) and a series of studies by Alexander and his colleagues (Alexander, 1973; Alexander & Parsons, 1973; Klein, Alexander, & Parsons, 1977). Both demonstrate a clear relationship between family functioning and delinquent behavior. Hetherington et al. (1971) compared the interactional patterns of families of institutionalized delinquents and families with normal children to discern patterns that might differentiate the two groups. They also administered a questionnaire to the families about discipline practices, trust of the child, and feelings of family members toward each other. Delinquent families were divided into three groups, based on scores on the Child Behavior Checklist, the scale developed to differentiate delinquents according to the character typology of Quay & Peterson (1975). As described previously, this typology categorized delinquents as socialized-subcultural, unsocialized-psychopathic, or disturbed-neurotic. A structured interaction task, consisting of giving the family a problem and asking them to solve it jointly, was utilized to observe families' interactions and assess patterns of communication. Variables assessed were; which person tended to dominate and control the conversation, how conflictual were communicative interactions, and how well could the family resolve conflicts and work together to develop a solution to the

assigned problem. They found that the families of each subtype of delinquency exhibited interaction styles that were consistent within the subtype, but distinctive from other subtypes and from normal families. Familes of neurotic-disturbed delinquents were dominated by the mother, with the child passively agreeeing with her. In these families the father disagreed actively with the mother, and extensive marital conflict was evident. In families of the socialized-aggressive delinquent the father dominated, with mother passively acquiesing to the father's opinions, but resisting any final resolution of their differences. The sons in these families were active in conversation, and were often unwilling to compromise. Among the families with unsocialized-psychopathic delinquents, the father appeared to dominate, but communication patterns were often unclear. Both parents were active in decision making, with the son minimally involved. However, when the son would become involved, often it was to aggress against or disagree with the mother. Children from these famlies rarely were able to reach a resolve with their parents. Families of nondelinquents did not exhibit any one pattern of interaction, although in comparison to delinquent families, the son from normal families had significantly more influence on decisions. However, the parents in normal families tended to influence decisions more than their sons, but equally to each other. Also, Hetherington et al. note that although conflict between sons and parents was common among these families, they rarely failed to reach a resolve. The normal families differed from the delinquent families on the parent questionnaire. In

comparison to normal families, parents of the delinquents tended to be rejecting, reported using threats and physical punishment more frequently, and have little confidence in their children. Additionally, parents of the disturbed-neurotic delinquents were distinguished from other subtypes by their anxiousness about aggression. Parents of socialized-aggressive children were distinguished by their permissive attitude toward their children's behavior. Also, parents of this type delinquent tended to report more satisfaction with their marriage than the other two subtypes, and have more interests in common. Parents of the unsocialized-psychopathic children were distinguished from the other subtypes by their active support of their son's aggression outside the home, although they did not permit such expression within the home.

Hetherington et al. (1971) have presented the most detailed examination to date, of the relationship between particular interaction styles in the family and delinquency. Their findings may have been more distinct than would be found with a sample of noninstitutionalized delinquents, but the results still have implications for delinquency identification research. First, the distinction of type of delinquent by family interaction patterns, suggest that there is a direct relationship between family functioning and delinquent behavior in a member of the family. And second, these results begin to specify what type of functional difficulties are related to delinquent behavior, and lay a foundation for identifying some accurate and powerful means for identifying delinquents (by type of family difficulty) and

developing interventions. If a stronger tie can be established between type of delinquency and particular types of dysfunction in the family, then more accurate, and perhaps earlier, identification is plausible.

The other group of studies, that merits specific consideration is the work of Alexander and his colleagues. Their investigations of a family systemic approach to delinquency has been methodologically sound and provides strong support for considering family systemic functioning in delinquency identification and prevention efforts. Alexander (1973) reported that among families of delinquents, distribution of time talked by family members was usually skewed so that one person spoke most of the time. However, that person was not necessarily the most influential family member. He observed that among such families, conversations seemed disjointed and confusing, and that what one member said was not necessarily predicated upon or directly related to what the previous speaker had said. He hypothesized that the child's delinquent behavior could be due to the confusing and inefficient communication styles. The delinquent behavior may have been one way for the child to express his concern and feelings in a system where little oppurtunity for direct expression was available. By implementing family therapy which focused on reinforcing an even distribution of talking time, Alexander & Parsons (1973) reduced recidivism of target children by 50 percent. In another application of therapy to equalize talking time, Klein, Parsons, & Alexander (1977) found that subsequent delinquency among siblings of treated families

of delinquents, was significantly lower than for a control group. They note that in both interventions, the topics of the family conversations did not change significantly during or post intervention. Most families continued to interact in a conflictual manner with negative affect predominating. However, conversations became more coherent and verbalizations from family members were more congruent with the topic of previous speakers. Alexander & Parsons (1973) report that the families did not seem to be happier, but were able to communicate more clearly, and this seem to aid more adaptive systemic functioning. This research is important for identification efforts for several reasons. First, direct evidence of a relation between delinquent behavior and family functioning has been provided. Not only did changing family interaction style decrease recidivism, it was useful in preventing delinquency in siblings of delinquents. Second, Alexander and his colleagues suggest that it is not necessarily the subjective happiness of family members or the presence of conflicts that are related to delinquency, but rather dysfunctional communication processes within the family. This suggest that consideration of variables such as family organization and control, which measure the systemic structure of the family, may be particularly related to delinquent behavior.

As these two research projects (Hetherington et al., 1971; Alexander & Parsons, 1973) demonstrate, there is substantial evidence that family systemic functioning and delinquent behavior are related. Measurement of variables that indicate family functioning should be

included in delinquency identification research. Also, it appears that system maintenance variables such as how controlled interactions are and how organized interactions are have particular utility in identification research. However, two limitations of the family functioning research are noteworthy. First, all of this research has been on subjects already identified as delinquents, and therefore it is not possible to determine to what extent the child's delinquency has influenced the manner in which the family interact and possibly created the observed dysfunction, and to what extent the dysfunctional family system precipitated delinquent behavior. The study by Klein, Parsons, & Alexander (1977) provides some suggestion that the direction of influence is from family dysfunction to delinquency, as changing family interactions prevented expected delinquency in siblings of delinquents. A second limitation of family functioning research is the heavy reliance on identified delinquents for the sample population. Identified delinquents are an unrepresentative minority of the adolescents engaged in delinquent behavior (Williams & Gold, 1972), and therefore, the generalizability of many of the reported results can not be ascertained or presumed. Research that measures family functioning variables among subjects that have provided self-report data on delinquent behavior is required to clarify this matter. Also, few studies concurrently measured the influence of other variables to ascertain the interactive effects of family systemic variables with other influences on delinquent behavior. However, compared to research on other critical variables the research on

family functioning seems to present the clearest, and most substantial support for consideration as a variable in identifying and predicting delinquency. Additionally, development of standardized measures has progressed substantially.

Moos and his colleagues (Billings & Moos, 1982; Fuhr, Moos, & Dishotsky, 1981; Moos & Moos, 1976, 1981) have developed and researched a model of family functioning and derived from it a typology of family envrionments, differentiated along three dimensions; relationships style, personal growth orientation, and system maintenance. A standardized scale, The Family Environment Scale (FES; Moos & Moos, 1981) has been developed to measure these three dimensions and the overall emotional climate of families. The FES has been validated against clinical judgements, other measuresof family functioning and family self-reports (Billings & Moos, 1982; Fuhr, et al., 1981; Moos & Moos, 1981). Fowler (1981, 1982) factor analyzed FES profiles of normal families and families of a clinical population and reported that two dimensions emerged; cohesion-conflict, and organization-control. The FES, and Fowler's identified dimensions have been used in the present research to measure family functioning.

Implications of Family Variables Research

Family variables have traditionally been popular interests of delinquency identification researchers, with the most attenion paid to structural variables such as father absence, but with increasing interest in family functioning in recent years. Structural variables may become less useful as discriminator or predictors as divorce

becomes more common and family size becomes fairly uniform. Also, in contrast to the varied effects found for structural variables, systemic functioning variables may be more direct and consistent influences on delinquent behavior. Systemic functioning measures can incorporate most of the effects of structural variables, and additionally, measure the interactive/dynamic aspects of the family as a system. However, as measures of structural variables are easy to obtain, obtain, they should be included in identification research for thorough consideration of the influence of family variables on delinquency. Additionally, as has been emphasizd throughout this paper, it is not specific variables that are likely to sufficiently discriminate delinquents, but rather concurrent consideration of several variables that will provide a utilitarian identification model.

Peer Group/ Subculture Influence

The interest in the influence of peer groups and subculture on delinquency developed from studies that found that the official delinquency rate varied from one section of a city to another, and that the rate of a given area correlated to the area's relative socioeconomic status (SES) (Shaw & McKay, 1942). Poorer, deteriorated areas of the city had the highest rates of crime, and suburban areas the lowest, and the poorer areas of the city were occupied by lower socioeconomic groups, in particular minority groups. It was theorized that because of the deteriorated state of the urban environment and the economic isolation from the majority culture of the poorer sections of cities,

no sense of community developed among inner city dwellers, which led to social disorganization (Shaw & McKay, 1942). As social controls decreased, deviant subcultures, in particular gangs, began to dominate the social relationships of youths. Deviant values became engrained and integral to the minority culture and lower socioeconomic status groups, and were passed from generation to generation (Shaw, 1966). The common hypothesis of studies that have applied this theory to delinquent identification is that delinquent behavior is syntonic with peer group and/or subculture values, and perhaps is required for membership (Empey, 1978). According to this hypothesis, the social environment is the sole significant influence on the development of delinquency; delinquency is primarily a lower socioeconomic class phenomenon, and identification efforts should emphasize socioeconomic status. It should be stressed that this approach does not consider the minority groups and other members of the lower socioeconomic status class, to be characteristically corrupt or delinquent, but rather that it was social conditions that created and support a delinquent subculture. Legal transgressions are clashes between values that have developed within the subculture in reaction to environmental disarray, and middle class values represented in the legal system (Reason,1974).

The research available has not supported the heavy emphasis on subculture and socioeconomic class, that the peer groups/subculture deviance approach proposes. Tittle, Villimez, & Smith (1978) reviewed thirty five studies that examined the relationship between social

class and delinquency. They conclude that although a weak negative relationship between official delinquency status and socieconomic class is supported by many early studies, more recent studies show a decreasing relationship to a level of no relationship between delinquency and socioeconomic status. Also, they note that self-report data on delinquent behavior has not supported any relationship between delinquency and social class.

Short & Strodbeck (1965) tested the validity of presuming different values between middle and lower socioeconomic classes. They presented middle class delinquents, lower SES nondelinquents, and lower SES gang members with lists of activities thought to represent middle class values in areas such as goal oriented behavior, use of leisure time, and ethical orientation. It was hypothesized that different socioeconomic groups would have different values and therefore, differential rates of endorsement would occur between the groups, with middle class delinquents endorsing the activities (and the associated value) most frequently, followed by the lower SES nondleinquents, and then the gang members. Contrary to the expected results, no significant difference was found in frequency of endorsement of the activities between the three groups. The only noteable difference, according to Short & Strodbeck, was that when asked to generate lists of valued activities, gang members listed several activities such as hanging on the corner and fighting in order to obtain a reputation as tough, which were not valued by the other two groups. Short & Strodbeck interpet these results as arguements

against considering different SES groups as having different values. They argue that people from lower SES groups value the same goals and activities valued by the majority culture, but also consider activities specific to their environment valid. This study's results are questionable because the authors did not control for possible social desireability effects influencing the reports of the subjects, and their conclusions seem extreme based on the data they obtained. However, the results support considering lower socioeconomic groups and minority cultures, as one segment of the majority culture, with some unique features, rather than presuming different social classes represent different cultures and values.

Krohn, Akers, Radosovich, & Lanza-Kaduce (1980) tested the influence of class culture on delinquency. They tested students from 15 schools, in two states, for level of self-reported delinquent behavior. Schools were classified by the primary socioeconomic status of the students into four categories; upper middle class, middle class, working class, and mixed working and middle class. They found that although mean self-report scores inceased as social class of the school decreased, scores were not significantly different between schools of different socioeconomic status. As a secondary interest, Krohn et al. (1970) compared the correlation of socioeconomic status of students in the schools with a mix of middle and lower socioeconomic status groups and found that socioeconomic status was inversely related to self-reported delinquent behavior ($r = -.23$, $p < .01$). However, as this correlation could only account for about 5 precent of

the variance, and since the correlation did not hold across all schools, Krohn et al. (1980) consider the finding of little practical interest.

Almost all available results argue against utilizing socioeconomic status in delinquency identification research if one is interested in discriminating delinquents by their behavior. Contrary to what this view implies, delinquency is not universal among lower socioeconomic classs youths. Kobrin (1971) found that half of a sample of subjects living in a high delinquency area, did not participate in the juvenile street life. Nor are delinquent behaviors significantly more prevalent among lower socioeconomic status youths. As previously mentioned, research has suggested that socioeconomic status can be correlated to official status (Gold & Williams, 1966), but this correlation seems to be due more to differences in judicial handling of lower and middle class delinquents than behavioral differences (Glaser, 1979; Howlett, 1973). On the other hand, those interested in discriminating delinquency by official status, may want to include this information.

Monahan (1982) argues aganist including factors such as socioeconomic status that are not readily changeable, as they are not likely to provide useful means for directing interventions, and they imply that a person is responsible for characteristics that are beyond his control (i.e. gender, race, socioeconomic status). The appropiate role for socioeconomic status seems to be, to consider it an important means for investigating the interactive effect of different levels of

economic and social resources with other influences on delinquency and its prevention and treatment. Scientific and explorative investigations may benefit by its inclusion, but evidence at this time, suggest it is not a viable variable for applied identification research.

As a derivative of the deviant subculture theory, some researchers suggested that it is deviant peer groups that directly promote and maintain delinquent behavior, rather than through influence on the subculture (Cohen, 1955; Sutherland & Cressey, 1978). The deviant peer groups, in particular gangs, are hypothesized to value behavior and moralities that are in conflict with the values of the majority culture, and delinquent behavior is an outgrowth of these deviant values. Such an approach would seem to emphasize peer influence as a primary influence on delinquent behavior. Matsueda (1982) compared the fit of a causal model based on a deviant peer group hypothesis (differential association) with a model based on Hirschi's (1969) attachment model which emphasizes relationships with parental and authority figures. Matsueda reports that the deviant peer group model variables provide a better fit in explaining variance in level of delinquent behavior, which provides support for considering peer influence to be important. However, Matsueda had included several variables such as marital status of parents and parental supervision in his model that showed the best fit, limiting the valdity of considering his model to be purely a deviant peer group model. In fact, his model is a multiple factor model, incorporating individual,

school, family, and peer variables. In another test of the importance of deviant peer group influence, Trcukenmiller (1982) regressed several variables measuring subjects' perceptions of family and peer relations, against level of self-reported delinquent behavior. Perceived normative group pressure pressure toward delinquency and perceived parental rejection accounted for the same amount of the variance, and the largest portions accounted for by any variables ($\underline{r}^2$ = .24 for each) Truckenmiller emphasizes that peer group pressure may have been underestimated as an important influence on delinquent behavior. However, he also notes that his research suggest that it is the saliency of the interpersonal relationship between peers that is important, rather than simple conformity to a group norm that is important. However, he fails to consider research that suggest level of peer influenc is related more to family variables than to the type of peer influence (Smith, 1976), which suggests that perceived parental rejection may cause increased susceptibility to peer influence. Also, Truckenmiller does not consider that peer influence is often situation specific (Larson, 1972), and that for most adolescents, parental values are similar to their own, despite perceived differences (Lerner, 1975). Finally, he fails to address the positive influence peer relations can have, instead, presuming peer influence is always towards delinquent behavior. His conclusion of the primacy of deviant peer influence is not warranted. A better supported interpetation of his results, in the context of a wider sample of

pertinent research, would be that the importance of perceived peer influence is a function of perceived parental rejection.

Klein & Crawford (1967) suggest that contrary to the cultural deviance hypothesis portrayal of delinquents as engaging in a mutual adventure and possessing a strong espirit de corps, the gang members they studied had uneasy alliances, and showed little interpersonal allegiance to each other except as a means for protection from other gangs. Hirschi (1969) reported that delinquents reported little attachment or fraternity in their delinquent activities and did not trust their fellow gang members. Short & Strodbeck (1965) observed that intra-gang interactions were characterized by an omnipresent tone of aggression and hostility. They suggest that gang cohesion due to a shared value system is an illusion, and actually gangs function mostly for protection and aid in individual aggressive act.

Implications of Peer Group/Subculture Research

The research available suggest that emphasizing socioeconomic status and differences in cultural values among socioeconomic groups are not likely to provide useful information for identification efforts. In fact, socioeconomic status in general, appears unlikely to aid in differentiating those likely to engage in delinquent behavior from those not likely to do so. It appears to have the most utility for identifying differences in processing within the legal system. Peer influence may or may not be of interest to scientific studies and delinquency identification research, but the evidence presently available, suggest that it may be more a perceived than a real

influence, or a secondary rather than a primary influence. As to the effect of peer influence, it is likely that the relative influence of peers varies depending on the type of peer relationship, and one's relationsip with one's parents. Distinction of type of peer influence seems useful, such as differentiating peer group conformity from interpersonal attachment, and differentiating positive peer influence from negative peer influence.

Economic/Social Strain

Strain theory can be defined by two hypotheses. The first is that most people from all socioeconomic status levels aspire to similar goals. The second is that economic and social limitations block access for most lower socioeconomic status persons to the legitimate means of reaching these goals. According to these hypotheses, delinquency is one expression of the anger and frustration resulting from blocked access. Also, to some extent, delinquent behavior is an attempt to secure these goals through means other than those culturally sanctionied. (Cohen, 1955; Cloward & Ohlin, 1960; Reiss & Rhodes, 1961).

Like subculture deviance, strain theory rests on the presumption that socioeconomic status is the major determininant of delinquent behavior. Like subculture deviance theory, strain theory has not been supported by research Tittle, et al., (1978). As prevalence of delinquent behavior does not significantly differ across socioeconomic status groups (Erickson & Empey, 1963; Weis, 1974), it seems unlikely

that blocked access because of socioeconomic status is a major cause of delinquent behavior. Strain due to socioeconomic status may be influential in the greater prevalence of official status as a delinquent found among lower socioeconomic groups. People from these groups may utilize juvenile court to arbritrate family problems and to administer punishments to children, whereas middle and upper class families with similar problems have access to other resources and therefore utilize juvenile court less (Ingram, 1972). Truckenmiller (1982) found that perceived lack of access to occupational roles and access to educational roles accounted for a negligible portion of the varance in level of self-reported delinquent behavior (less than 1 percent each). His results suggest that an economic strain explanation of delinquency has little utility for identification research.

A more plausible application of a strain theory to delinquent behavior is to consider limited economic, social, and psychological resources as stressors that cumalatively can increase the likelihood of delinquent behavior. But such an approach de-emphasizes socioeconomic status as the primary basis for the development of delinquent behavior, and emphasizes the interaction of other variables such as individual character, social skills, school functioning, and family variables. Hirschi (1969) found in his study that most of the effects of socioeconoic strain were better and more accurately accounted for by assessing the family's ability to garner resources to cope with stresses. His reports suggest that individual differences in amount

of social and psychological support may be a more viable focus than attending to socieconomic status.

Implications of Social/Economic Strain Research

Like the other primarily sociological approach (subculture deviance), variables emphasized by strain theory (primarily socieconomic status) have limited utility for delinquency identification. However, if one considers economic and social status as one of many potential stressors, having differential effects on individuals depending on the interpersonal resources they have available to them, then identifiable economic and social stressors could be useful for identifying delinquents.

Integration of Factors

Some attempts have been made to integrate variables from some or all of the five major factors into a comprehensive theory of dleinquency. Glueck & Glueck (1950, 1962) considered parental discipline and attitude, biological traits (body shape, intelligence) and social environment to explain delinquency, as variables of importance. However, they did not actually consider the variables concurrently, instead considering each separately and consecutively. The Gluecks studies have been heavily criticized for metholdogical flaws in this paper and elsewhere (Briggs & Wirt, 1965). Most of their findings have been dismissed as biased, subjective, and unreplicable. However, their work has been the impetus for considering multiple factors in delinquency identification, and in particular, family variables and

environmental conditions. Such an approach remains credible, although it appears in more sophisticated forms (Hirschi, 1969).

Hirschi (1969) applied attachment theory (Ainsworth, 1973; Bowlby, 1973) to explain delinquency. He theorizes that delinquency occurs when there is inadequate bonding (emotional attachment) to familial figures and socially sanctioned morals of the society, such as laws. According to Hirschi, people bond to other people and to morals and values. Bonding is composed of four elements; attachment to, belief in, commitment to, and involvement with people and values. Each element is necessary to prevent delinquency. Hirschi suggest that people are born amoral at birth, and by our attachment to others, and as an extension of our attachment to others, to societal institutions and norms, we develop restraint and self control to not commit acts that offend or hurt those we are attached to. We begin to feel morally bound to our involvement in conventional activities and the laws of the society. Also, Hirschi notes, involvment in illegal activities is too risky for bonded people as they stand to lose access to valued activities and rejection by valued others if caught and their involvment in conventional activities does not leave enough time to engage extensively in illegal activities.

Hirschi (1969) has reported that bonding to one's family and education are primary deterrants to delinquent behavior. Hepburn (1976) and Jensen (1972) tested Hirschi's theory and have reported that the variables of family relationships and valueing education which are emphasized by Hirschi, are better able to account for

delinquent behavior than most other theories. In particular, attachment to parents seems to be negatively related to delinquency. Hirschi's theory is presently one of the more popular approaches to delinquency. He stresses individual, school, and family factors as the primary determinants of whether or not delinquency develops. His theory has not been refuted by the research, and it seems to require adequate consideration of multiple factors. However, Hirschi suggest delinquency is largely determined early in life, by relative attachment to parents and early teachers, and the status of these relationships sets the tone for the rest of one's life. But, as mentioned earlier, prediction of delinquency much before early adolescence has not been very successful (Wedge, 1978), and many intervening events that can enhance or retard the likelihood of delinquency can occur between time of prediction and the criterion event of adolescent delinquency. Hirschi's theory is useful as a step toward developing an multivariate identification model, based on individual, school, and family variables, but is still emphasizes one primary causal mechanism (attachment) to the exclusion of other influences. Also, Hirschi is able to explain what factors are important in not developing delinquency, but he has not adequately addressed what differentiates serious from less serious delinquents, and transiently delinquent subjects from those engaged in prodromal criminality.

Johnson (1979) presented another multifactor theory of delinquency, combining the bonding mechanism that Hirschi emphasized, with peer influence as the major determinants of delinquent behavior. He

suggests that delinquent involvement is prevented by attachment to others and internalization of the values and behavioral codes of those others. He hypothesizes that people in lower socioeconomic status groups have less association with parents and authority figures that endorse law abiding behavior, and therefore they internalize a morality that does not value abiding by laws. Johnson's theory seems to be simply a subculture deviance theory presented in a new package. As the evidence did not support the subculture deviance theory, it appears unlikely that it will support Johnson's repackaging of the theory. Also, the research has shown that socioeconomic status is not related to delinquent behavior prevalence, and so any theory which relies heavily on socioeconomic status is unlikely to be accurate. In fact, when Johnson tested his theory, he found that a multivariate model containing the variables he emphasized (attachment to parents, acceptance of societal values, attachment to school, delinquent and nondelinquent associates) accounted for 27 percent of the variance in self-reported delinquent behavior. However, socioeconomic status did not account for any significant portion of the variance. Most of the important variables seem to be family and school variables. His model has many of the limitations discussed in relation to Truckenmiller's (1982) model, in that, he relied heavily on perceived influence, rather than considering actual influence of variables, and the possible intercorrelation of variables. It is likely that most of the variance attributed by Johnson to peer association, may be more accurately

attributed to subjects' relationships with their parents (Smith, 1976).

The most efficacious combining of variables to explain delinquent behavior, to date, has been the model tested by Simcha-Fagan (1979) and described in detail in chapter one. She combined individual, school, and family variables, and was able to account for over 50 percent of the variance in level of delinquent behavior, as reported by the subjects' mothers. Her efforts suggest that it is a combination of variables that will be useful to delinquency identification researchers, rather than discovering a specific mechanism or particular variable. The present research extends Simcha-Fagan's research by utilizing standardized measures of the variables, and relying on self-reported delinquent behavior.

Implications of Critical Factors Research

A review of the literature on critical factors to consider in delinquency identification research suggest that several variables traditionally considered to be influential on the development of delinquency, merit consideration in research emphasizing delinquent behavior. However, the relative importance of many identified variables seems to be less than hypothesized by many researchers. Socioeconomic status and a learning/perceptual disability basis seem to have comparatively less support, than individual characteristics, school functioning, and family functioning variables. Even those variables that appear useful in a predictive model have shown only low to

moderate correlation to level of delinquent behavior. Apparently, no one variable can sufficiently discriminate or predict delinquency. Instead of emphasizing the best predictor or finding the cause of delinquency, the research suggests that the most progress can be made by the simultaneous consideration of several variables. Specifically, there is the most support for exploring the efficacy of a combination of individual character and social skill, school performance and behavior, and family structure and systemic functioning.

Summary of Implications of Research on Delinquency Identification and Statement of Hypotheses

A careful review of the policy issues, methodological issues, and critical variables to consider, pertinent to delinquency identification suggests that research in this area is a very complex task that has been studied, to a large extent with simplistic and inadequate methods. Additionally, many efforts have been limited by their emphasis on one variable to the exclusion of others. Finally, reification of the working principle that statistical significance is a basis for considering results not due to chance, has created a number of scientifically interesting, but inapplicable results. These proclivities among researchers has created a gap between reseachers and policy boards, and have been influential in diminishing the impact of psychologically based identifcation and prevention efforts in juvenile justice.

This review found that the problems with previous efforts may not be due so much to focus on irrelevant factors, but rather, to methods that limited the validity, generalizability, and utility of the results. Several researchers have noted similar observations and a consensus of thinking about methodology in the field is emerging (Lorion, 1982; Monahan, 1981, 1982; Patterson, 1981; Simcha-Fagan, 1978; Wedge, 1978). Several recommendations for further delinquency identification research, that merit utilization, can be culled from the present review and from the observations of others.

1. Self-report measures should be used to assess delinquent behavior. Official records serve better to assess official status and to aid in understanding the relationship between delinquent behavior and official status.
2. Normative sampling should be used for development of identification and prediction models, to decrease the likelihood of erroneous prevalences of studied variables. Use of institutionalized delinquents should be mited to studying the differences between that population and a more general population of delinquents.
3. Concurrent consideration of several variables, analyzed through methods such as multiple regression is necessary to develop models that can reflect accurately the complex nature of delinquent behavior.
4. Meaningfullness of results should be interpeted in terms of amount of variance accounted for and the accuracy of

classifications, rather than simply reporting the probability that results are due to chance.

The present study is an attempt to implement these methods through a multivariate analysis of the relationship between several variables indicative of individual, school, and family factors, and self-reported delinquent behavior and official delinquency status. Two primary activities have been undertaken to carry this out; the development of multivariate models of delinquent behavior, and applications of models developed on older adolescent to younger adolescents to test the accuracy of the model for predictive categorization. Seven hypotheses are tested through these activites.

1. Several variables indicative of individual (emotional adjustment, social skill, and plans for future), school (grade point average, standardized test scores, number of absences), and family (parental marital status, family systemic functioning) factors will correlate at statistically significant, but low to moderate absolute levels, with frequency, variety, and seriousness of self-reported delinquent behavior.
2. Socioeconomic status, as determined by the two factor index of socoieconomic status (Hollingshead, 1957) will not correlate significantly ($p < .01$) with level of self-reported delinquent behavior (frequency, variety, or seriousness). Socioeconomic status will correlate at a low level with official status, though. Additionally, it is expected that amount of difference in parental scores on the scale for socioeconomic status will

correlate with level of self-reported delinquency and official status.

3. Age of first reported delinquent act and mean age reported for first committing delinquent acts will correlate significantly with level of self-reported delinquent behavior and with official status.
4. Level of self-reported delinquent behavior (frequency, variety, and seriousness) will correlate at a statistically significant, but low absolute level, with official status.
5. The frequency, variety, and seriousness categorizations of self reported delinquent behavior will correlate significantly and at a moderate to high level.
6. A multivariate model of delinquent behavior, developed from variables indicative of individual, school, and family functioning, will in combination, be able to account for a statistically significant and conceptually substantial proportions (defined as 30 percent or more for this research) of the variance in frequency, variety, and seriousness of delinquent behavior.
7. A discriminant function developed to discriminate more delinquent (defined as reporting more than 50 items for frequency categorization, more than 2 types of offenses for variety categorization, and a felony for seriousness categorization) from less delinquent older adolescents (defined as ages 15 to 18), will be able to significantly discriminate more delinquent

younger adolescents (ages ages 11 to 13) from less delinquent younger adolescents, when delinquent behavior is less prevalent (more delinquent is defined for this age group as reporting more than one offense for the frequency categorization, and an offense other than a status offense for variety and seriousness categorizations).

CHAPTER IV

METHODS

Subjects

The subjects for this study were 337 males from grades six through twelve, who, with parent permission, volunteered to participate in the research. Subjects were recruited from five schools including two high schools, two middle schools, and one elementary school in the Knoxville area, and ranged in age from eleven to eighteen and a half. Socioeconomic status ranged from levels I to V of the two factor index of social position (Hollingshead, 1957). Table 4-1 lists the distribution of subjects by age and socioeconomic status. Subject responses were not analyzed in terms of race due to the sample's racial homogenity (ranged from 97 to 99 percent Caucasian).

Measures

Four categories of measures were included in the survey; individual functioning, school functioning, family functioning, and delinquent activity.

Individual Functioning

Emotional Adjustment Scales (EAS). This is a 35 item self-report measure (subjects check whether each item is true or false) of general emotional adjustment, derived factor analytically (Johnson & Overall,

Table 4-1

Distribution of Subjects by Age and Socioeconomic Status

Age	Socioeconomic Level[1] I	II	III	IV	V	n
11-12	1	1	2	6	5	13
12-13	0	1	8	8	3	20
13-14	0	2	10	25	7	44
14-15	1	4	11	29	11	56
15-16	2	4	34	36	10	86
16-17	3	6	10	35	5	59
17-18	1	1	9	15	6	32
18	0	1	8	2	1	12
Sum	8	20	92	156	46	322

[1]Determined by averaging mother and father's weighted scores according to two factor scale (education and occupation), of Hollingshead & Redlich (Hollingshead, A. B. Two factor index of socioeconomic status. Unpublished manuscript, Yale University, 1957.

1973) from the Psychological Screening Inventory (Lanyon, 1970). The EAS was one of three factors identified. The other two factors were social maladjustment and introversion. Items included on the EAS relate to reported lack of energy, somatic complaints, lack of self confidence, difficulties in interpersonal relationships, feelings of isolation, feelings of unreality, concern over mental illness, and the admission of psychological problems. Items for the EAS were taken from the Alienation and Discomfort Scales of the Psychological Screening Inventory, and only items with a loading of at least .30 (range from -.30 to +.48) were included. The Alienation and Discomfort scales have KR 20 internal validity correlations of .62 and .85 respectively and test retest correlations of $\underline{r}$ = .66 and $\underline{r}$ = .92, respectively. A copy of the EAS is included in Appendix A.

Social Skills Self Efficacy Report (SSER). This measure is made up of eight self-report items designed to asess an adolescent's ability to produce assertive resonses in high frequency social situations with teachers, parents, peers, and strangers (Pentz, 1982). Two items are presented describing interactions in four interpersonal contexts; peer, parent, teacher, and stranger interactions. Each item contains a social dilemna with an examplary assertive response. Subjects are required to indicate by checking a "yes" or a "no" response whether or not they feel capable of saying the examplary response in the given context. Those responding "yes" to indicate that they feel capable, estimate their level of confidence on a Likert Scale of 10 (not at all sure could say) to 100 (absolutely sure could say). Subjects receive

a score corresponding to their level of confidence that they could say the examplary response (subjects reporting "no", receive a score of 0). Pentz (1983) reports test-retest correlations of .78 over a two week period, but only .36 over a six month period. However, she suggest that this moderate level is due to developmental changes and intervention effects. The scale correlates significantly, but moderately with teacher ratings of assertiveness (r = .20 to .56, p < .001), assertive behavior in test situations (r = .58, p < .001), and level of drug use (r = .21, p < .05). Internal consistency was reported as .86 for reporting "yes" or "no", and .90 for level reported (Cronbach's alpha). A copy of this scale is included in Appendix A.

Other measures of individual functioning. Each subject was asked to estimate the number of friends he had he could trust, and to endorse one of seven statement pertaining to his post high school plans. The seven statements concerning future plans were collapsed into a dichotomous categorization of planning to obtain more education post high school and other plans. This dichotomous categorization was developed due to the sparse distribution of subjects in all of the categories other than going to college, going to a trade or technical school, and working. Also, this dichotomous categorization facilitated consideraton of this variable in the multivariate model development. The report of number of friends and plans for the future were obtained as part of the general questionnaire, included in Appendix A.

School Functioning

Academic performance data. Academic records were surveyed for each subject. Grade point average for the previous academic year, ranging from 0 to 4.0 for the previous academic year, and reading and total percentile scores from the California Achievement Test (taken within the last three years) were recorded. Additionally, subjects were asked whether or not they had repeated a grade (on page 2 of the general questionnaire).

Academic behavior. School records were surveyed for each student. Absenteeism and number of disciplinary actions taken against the student in the past year, were recorded. In addition to this information from their records, students were asked, as part of the general questionnaire, to rate their attendance (excellent, above average, average, below average), and their experience of reading (easy and interesting, easy but boring, hard but interesting, hard and boring).

Family Functioning

Demographic questionnaire. As part of the general questionnaire, subjects were asked to provide the following information about their family; the number of sisters and number of brothers they have, their birth order, and their parents' marital status, educational levels, and occupations. A copy of these items is presented in Appendix A.

Family socioeconomic status (SES) was assigned according to the average of the paternal and maternal scores on the two factor rating scale developed by Hollingshead & Redlich (Hollingshead, 1957). As originally designed, this scale obtained a score for subjects based on a weighted rank of father's occupation and education. Scores were derived for both father and mother of each sample subject. Although, the two scores were significantly correlated (r = .51, p <.0001), they were not highly correlated enough to simply rely on paternal socioeconomic score, as was originally done by Hollingshead & Redlich (1958). An average score was considered a truer representation of the relative social position of subjects than merely relying on paternal score. Where information was not available about both parents, or if one parent was not employed, socioeconomic status was assigned according to the score of the parent employed or for whom employement and educational level information was obtainable.

Family Environment Scale (FES). This 90 item self-report scale is designed to measure the social and interpersonal climate of the family (Moos 1974; Moos & Moos, 1976, 1981). Subjects respond "true" or "false" to each item as it pertains to their family. The scale is organized into ten, nine item subscales. Table 4-2, taken from the FES manual (Moos & Moos, 1981, p.2), lists and briefly describes the ten subscales.

Internal consistency of the FES subscales range from r = .61 for the Independence subscale to r = .78 for the Cohesion, Intellectual-Cultural orientation, and Moral-Religious Emphasis subscales.

Table 4-2

Family Environment Scale Subscales and Dimensions[1]

	Relationship Dimensions
1. Cohesion	the degree of commitment, help, and support family members provide for one another
2. Expressiveness	the extent to which family members are encouraged to act openly and express feelings directly
3. Conflict	the amount of openly expressed anger, and conflict among family members
	Personal Growth Dimensions
4. Independence	the extent to which family members are assertive, self sufficient, and make their own decisions
5. Achievement Orientation	the extent to which activities (such as school and work) are cast into an achievement-oriented or competitive framework
6. Intellectual-Cultural Orientation	the degree of interest in political, social, intellectual and cultural activities
7. Active-Recreational Orientation	the extent of participation in social and recreational activities
8. Moral-Religious Emphasis	the degree of emphasis on ethical and religious issues and values
	System Maintenance Dimensions
9. Organization	the degree of importance of clear organization and structure in planning activities and responsibilities
10. Control	the extent to which set rules and procedures are used to run family life

[1]Moos, R. J., & Moos, B. S. Family Envrionment Scale manual. Palo Alto, Calif.: Consulting Psychologists Press, 1981.

Test-retest correlations over an eight week period, ranged from $\underline{r}$ = .68 for the Independence subscale to $\underline{r}$ = .86 for the Cohesion subscale, and at one year ranged from $\underline{r}$ = .52 for the Independence Subscale to $\underline{r}$ = .89 for the Moral-Religious Emphasis subscale (Moos & Moos, 1981). The FES has been validated as a useful tool for clssification of family types, (Moos & Moos, 1976), means for examining family functioning (Fowler, 1981; Moos, 1974), and as a descriptive clinical measure of change in family climate during treatment (Fuhr, et al., 1982; Moos, Bromet, Tsu, & Moos, 1979). Many of these validation studies are described in the FES manual (Moos & Moos, 1981).

Moos & Moos (1981) have apriori defined three dimensions which subsume the ten subscales; Relationship dimension (Cohesion, Expressiveness, and Conflict subscales, Personal Growth dimension (Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, and Moral-Religious Emphasis subscales), and System Maintenance dimension (Organizaion and Control subscales). In contrast to this conceptual categorization of FES subscales, Fowler (1981) factor analyzed the FES subscales and derived two orthogonal dimensions; a coheson-conflict dimension (made up of the Cohesion, Expressiveness, Conflict, Independence, Intellectual-Cultural Orientation, and Active-Recreational Orientation subscales), and an organization-control dimension (made up of the Achievement Orientation, Moral-Religious Emphasis, Organization, and Control subscales). These two identified dimensions are congruent with mosts family systems theories and typologies (cf. Olson,

Sprenkle, & Russell, 1979). The ten subscale scores and the factors developed by Fowler have been utilized in the present research. A copy of the FES is included in Appendix A.

Delinquent Behavior

Delinquency Self Report Measure (DSRM). This is a 69 item self self-report scale of delinquent behavior and offical contact with police and the juvenile court, developed by Hindelang, et al. (1981). In their validation study, they suggested eliminating 10 items, found to have little discriminability, due to a low rate of endorsement among adolescents (i.e. tried to pass a check by signing someone else's name; kept money for yourself that you collected for a team, charity, or from someone else's paper route). The remaining 59 items were used in the present research.

Hindelang et al. (1981) report test-retest reliability (after a 45 minute interval of r = .91, and after a one week interval, r = .83 for a sample of male subjects on the DSRM. Internal consistency correlations for the four categories ranged from Gamma = .41 to Gamma = .49 for a sample of male subjects. DSRM self-reports were validated against reports by teachers, parents, official records, and in-depth interviews. Hindelang, et al. (1981) report that random in-depth followup interviews indicated that over 80 precent of subjects reported delinquent behavior accurately. A copy of the 59 item DSRM is included in Appendix A.

Of the remaining 59 items on the DSRM, 55 refer to activities, that if brought to the attention of legal authorities could make the

subject liable for prosecution as a delinquent. Items range in seriousness from status offenses, such as truancy and staying out past curfew, to criminal felonies, such as armed robbery, assault, and rape. The other four items pertain to contact with police and court personnel. These four items were totaled for each subject to form an official contact scale score, which was used as one mesure of official status. Subjects were asked to report the number of times in the last year they had committed each act (0 to 99 times). DSRM items were organized into three categorizations for analyses. The first categorization was by total number of deliquent acts reported. The number of times a subject reported committing each item was totaled across all 55 delinquent behavior items, to calculate a grand total of number of delinquent acts in the last year. This sum is referred to as frequency of delinquent behavior. To simplify the analyses frequency of delinquent behavior was collapsed into six levels; one or fewer delinquent behaviors reported, between two and five delinquent behaviors reported, between six and twenty delinquent behaviors reported, between 21 and 50 delinquent behaviors reported, between 51 and 100 delinquent behaviors reported, and 101 or more crimes reported. The second categorization of DSRM responses was the variety of types of delinquent behaviors reported. Items on the DSRM were classified into four subcategories of offense types for this categorization; status offenses, drug and alchohol use, property offenses, and person offenses. Each subject received a score from 0 to 5, depending upon how many of the subcategories his reported offense included. The

third categorization of delinquent behavior reported on the DSRM was by most serious delinquent behavior reported. Subjects were classified into one of five groups; no delinquent behavior reported, status offense, criminal misdemeanor, less serious felonies (labeled "minor" felonies), and more serious felonies (labeled "serious" felonies). Items on the DSRM were classified into the status offense, criminal misdemeanor, and criminal felony categories according to Tennessee law (Tennessee Code Annotated, 1982). Differentiation of felonies into less and more serious levels was accomplished by independent ratings by two graduate students in psychology. Interater agreement was calculated at $\underline{r} = .86$, by the formula: agreements/(agreements + disagreements).

To help clarify the three categorizatons' relationships, Table 4-3 presents a breakdown of each category and the level within each categorization. In Appendix A, each item on the DSRM is labeled to indicate its level within the seriousness and variety categories, and items on the official contact scale are noted.

Age of onset of delinquent behavior. Subjects were administered a ten item scale designed to measure onset of delinquent behavior. Nine of the items pertained to delinquent behavior and one to police contact. Items were taken from a general deviance factor identified during preliminary reseach on the DSRM (Hindelang & Weis, 1972; Weis, 1976). For each item subjects noted at what age they first committed the act (if ever), by checking under the column corresponding to an age from 10 to 17. Those having committed a given act for the first

Table 4-3

Distribution of Subjects Across Categorizations of DSRM Responses

	Categorizations		
Level	Frequency	Variety[1]	Seriousness[2]
0	less than 2 offenses n = 58	no offenses n = 51	no offenses n = 43
1	2-5 total n = 47	1 type n = 33	status only n = 18
	6-20 total n = 60	2 types n = 50	misdemeanors n =62
3	21-50 total n = 66	3 types n = 84	"minor" felonies n = 73
4	51-100 total n = 44	4 types n = 119	"serious" felonies n = 141
5	over 100 n = 62		
Total	337	337	337

[1]Four types of offenses were differentiated; status, drugs and alchohol, crimes against property, crimes against persons.

[2]Classified by legally most serious offense reported according to Tennessee Code Annotated.

time prior to age 10 were told to check under age 10. Similarly, those first committing a given act after age 17 were told to check under 17. Two measures were generated from this data; the youngest age checked for any any of the nine items refering to delinquent behavior, and the average age checked for all of the nine items, checked at any age. If a subject did not check the column under any age for a given item, this item was not included in calculating the average age of onset for this subject. Also, the item referring to age of first offical contact with police was not included in calculating average age of early delinquent behavior. A copy of this scale is included in Appendix A.

Official status. County juvenile court records were surveyed for appearance(s) and adjudication (having been officially processed through the court and declared delinquent by the court) of any subjects. Number of appearances and whether or not the subject had been adjudicated were recorded. Additionally, contact with juvenile officials and official status was tapped by the official contact scale from the DSRM.

Procedures

Permission was obtained to contact administrators of middle and high schools in the Knox County School system. Administrators at two high schools, two middle schools, and one elementary school agreed to allow solicitation of subjects through their classrooms. Teachers who taught required courses in each grade (6-11), and therefore had all or

a representative crossection of the males in that grade, were contacted to allow solicitation in their classes and use of class time for the survey. Subjects were solicited from classrooms of teachers agreeing to participate. In each grade of each school, at least one teacher of a required subject agreed to allow the solicitation during their classes.

Students in these classrooms were told that the survey was being conducted to better understand the relationship between individual, school, and family functioning, and law abiding and rule breaking behavior. After a brief description of the types of questions the survey would ask, students were asked to indicate interest in participating in the research. Those, volunteering were read and given informed consent forms to read, and parent permission forms to have signed indicating parental consent. Those students returning the signed parental permission forms, and signing an informed consent form were included in the study. Copies of student and parent informed consent forms are included in Appendix A.

Because of the sensitive, self-disclosing nature of the questionaires, participating students were assigned a number to use for identification of self report measures. Students were instructed not to write their name on any forms. Information from school and court records was recorded by name of subject, on separate forms. A list of the subject's names and corresponding identification number was kept separate from the self-report information. This list was used to collate all information about a given subject. Once all information

from court and school records was recorded by identification number, the original list of names and code numbers was destroyed.

Data was collected from students on two occasions, each lasting about 45 minutes. Subjects were surveyed in groups of 10 to 55, during school hours, at their respective schools. In the initial meeting, students received and completed the general questionaire, the Social Skills Self Efficacy Report, and the Family Environment Scale. During the second meeting, the Emotional Adjustment Scale, the Delinquency Self Report Measure, and the ten item measure of age of onset of delinquent behavior were completed.

School records were surveyed by the experimenter on a separate occasion with grade point average (potential range from 0.0 to 4.0), standardized achievement test scores from the California Achievement Test (percentile score of reading subtests and total score, based on national norms with a potential range from 1 to 99), and absenteeism for previous academic year (potential range from 0 to 175) were recorded for each subject. Permission was obtained from the head case worker of the juvenile court and the juvenile court judge to survey court records. Information from court records was obtained by the experimenter on a separate occasion by surveying court files for subjects' names. When a subject's name was located in the court files, the number of appearances before the court and whether or not the subject had been officially adjudicated were recorded (number of appearances, and 1 for adjudicated, 0 for not adjudicated). All school and court records were kept locked and separate from the

self-report information. Once all data were obtained, information for each subjects was collated and recorded by identification number. The coded lists of school records and court appearances were stored in a locked cabinet, and the list of names and corresponding code numbers was destroyed.

CHAPTER V

RESULTS

The analyses of data in this study were guided by two primary interests. The first was to examine the correlations of variables identified by previous researchers as indicative of individual, school, and family functioning, in relation to delinquency, with self-reported delinquent behavior (categorized by frequency, variety, and seriousness), in order to develop a multivariate model of delinquent behavior. The second guiding interest is in testing the applicability of a multivariate model of delinquent behavior, able to discriminate levels of frequency, variety, and seriousness of delinquent behavior among older adolescents, to younger adolescents. Therefore, the results of these two activities are reported in two separate sections. The first section reports on tests of the first six of the seven hypotheses generated by the review of pertinent research and listed at the end of Chapter 3. The seventh hypothesis is tested and reported on in the second section.

Development of Multivariate Model of Delinquent Behavior

Hypothesis One

The first hypothesis stated that a variety of variables indicative of individual, school, and family functioning would correlate at statistically significant, but low to moderate levels with all three categorizations of DSRM responses (total frequency of delinquent

behavior, variety of types of offenses reported, and legal seriousness of most serious delinquent behavior reported). Table B-1, in Appendix B list the range of scores, and the mean score for this sample on each variable

Individual variables. Eight measures reflecting individual functioning were collected for each subject; Emotional Adjustment Scale score (EAS), Social Skills Self Efficacy Report (SSER) scores (scores for peer, parent, teacher, and stranger items, plus an average score from all eight items were calculated), the number of trusted friends reported, and what plans for future the subject reported (more education versus other types of plans). Age and grade for each subject are also considered individual characteristics for analyses. Pearson product-moment correlations were calculated between each variable and level on each of the three categorizations of DSRM responses, except whether or not a subject had plans for more education, which was correlated by a point biserial correlation. Table 5-1 list these variables and the significant individual correlations by frequency, variety, and seriousness categorizations of Delinquency Self Report Measure (DSRM) responses. Five variables significantly correlated to all three categories, although, at moderate to low levels; age, grade score on the EAS, score on parent items from the SSER, and plans for more education. Average score on the SSER correlated significantly with frequency of delinquent behavior, but as the SSER items other than the parent items had negligible correlations with any categorization of DSRM responses, it was likely that the correlation

Table 5-1

Correlations[1] of Independent Variables and DSRM Response Categorizations

Variable	DSRM Categorization		
	Frequency	Variety	Seriousness
Individual Variables			
Age	.36***	.24***	.22**
Grade	.33***	.21**	.18**
EAS Score	.22***	.24***	.24***
SSER			
Peer Items	ns	ns	ns
Parent Items	.23***	.18**	.18**
Teacher Items	ns	ns	ns
Stranger Items	ns	ns	ns
Average Score	.16*	ns	ns
No. of Friends	ns	ns	ns
Plans more[3] Education	-.25**	-.22**	-.18**
School Variables			
Performance			
Recorded GPA	-.15*	ns	ns
Student Est. of Modal Grade	-.18*	-.21**	-.16*
Difference of GPA and Estimate	ns	ns	ns
CAT Total %	ns	ns	ns
CAT Reading %	ns	ns	ns
CAT difference	ns	ns	ns
Rating of Reading[3]	ns	ns	ns
Repeated grade[2]	ns	ns	ns
Social Behavior			
Recorded Absence	ns	ns	ns
Student Estimate of Absences	ns	ns	ns
Difference of Actual and Est. Abs.	ns	ns	ns
Rating of Attendance	ns	ns	ns
Disciplin. Acts	.17**	ns	ns

Table 5-10 (continued)

Variable	DSRM Categorization		
	Frequency	Variety	Seriousness
Family Variable			
Structure			
Family Size	ns	ns	ns
Birth Order	ns	ns	ns
Intact Family[2]	-.16*	ns	ns
Systemic Functioning			
Cohesion	-.26***	-.23***	-.15*
Conflict	.29***	.30***	.21**
Expressiveness	ns	ns	ns
Independence	.15*	ns	ns
Achievement Orientation	ns	ns	ns
Intellectual-Cult. Orientation	-.19**	-.24**	-.21**
Activity-Recreation Orientation	ns	ns	ns
Moral-Religious Emphasis	-.27***	-.26***	-.21**
Organization	-.17**	-.16*	-.19**
Control	ns	ns	ns
Fowler's Factors			
Cohesion-Conflict	ns	ns	ns
Organization-Control	-.21**	-.17**	-.19**

[1]All correlations are Pearson product-moment correlations, except where noted.

[2]point biserial correlation

[3]Contingency coefficient

* $p < .01$

** $p < .001$

*** $p < .0001$

between average score on the SSER and frequency of DSRM responses is primarily due to the correlations of the parent items. Therefore, average score was not considered further for multivariate model development.

School variables. Seven measures of school performance were obtained and included for consideration in development of the multivariate models of delinquent behavior; recorded grade point average for the previous year, student's estimate of modal grade for the previous academic year, the difference between actual grade average and estimated modal grade, total battery and reading scale percentile scores from the California Achievement Test (CAT), a score based on the difference between total battery and reading percentile scores, whether or not the subject had reported repeating a grade, and the subject's rating of reading (easy and interesting, easy but boring, hard but interesting, hard and boring). Pearson product-moment correlations were calculated for all of these variables, except rating of reading, which was analyzed by $\underline{X}^2$ and which yielded a Contingency coefficient. The significant correlations between school performance variables and each of the three categorizations of DSRM responses are listed in Table 5-1. As can be observed, only student's estimate of their modal grade correlated significantly (and negatively) with all three categorizations of DSRM responses. Recorded grade point average correlated significantly and negatively with frequency of reported delinquent behavior ($\underline{r} = -.15$), and at close to significance level with variety of reported delinquent offenses ($\underline{r} = -.12$, $\underline{p} < .02$),

which suggest it should not be dismissed from use in development of multivariate models of delinquent behavior. Also, although recorded gradepoint average and modal grade were correlated significantly (r = .55, $p < .001$), the level of correlation is low enough that both can be considered different enough to be useful in multivariate models. X^2 analysis of ratings of reading, found that subject rating of how interesting and hard reading was did not significantly relate to frequency, variety, or seriousness of DSRM responses (X^2 distributions are listed in Appendix B, Table B-2).

Five measures of social behavior within school were obtained and correlated to the three categorizations of delinquent behaviors, using Pearson product-moment correlations; number of absences for past academic year, student's estimate number of absences for the previous academic year, a difference score between actual amount of absence and reported amount of absence, a self evaluation of the student's attendance (excellent, above average, average, below average, poor), and the number of official disciplinary actions against the student. Results (Table 5-1) indicate that only number of disciplinary actions correlates at or near significance level with all three categorizations of DSRM responses (r = .17, $p < .001$, for frequency, and r = .12, $p <$ .02, for variety and seriousness).

As absenteeism reported for this sample was generally low (mean of 6.43, mode of 0), it is possible that the correlation between absenteeism and DSRM responses categorizations may have been attenutated. Therefore, number of absences was grouped into three

levels; 0 (n = 72), 1-10 (n = 178), 10+ (n = 84), and X^2 analyses were performed. None of these analyses yielded significant results. (X^2 distributions are listed in Appendix B, Table B-3).

Family variables. The results of Pearson product-moment correlations between measured family variables and the three categorizations of DSRM responses are included in Table 5-1. Two structural variables, family size and birth order were analyzed by Pearson product-moment correlations and neither variable correlated significantly with any of the categorizations of DSRM responses. The other structural variable measured, marital status, was analyzed by three methods. The first analysis was to categorize marital status into three types; intact marriage subject is living with both parents), divorced or remarried following divorce, and other (included one parent deceased, remarriage after death of one parent, subject not living with either parent). X^2 analysis of the distribution of subjects across type of marital status, by levels within each of the three categorizations of DSRM responses, found that frequency of delinquent behavior is related to marital status (X^2 [10] = 27.34, $p < .01$, C = .27). However, marital status did not relate to level of variety or seriousness of delinquent behavior (see Table 5-1). Analysis of cell distribution (Table 5-2) suggest that subjects from intact families are somewhat less common among the higher frequency levels of delinquent behavior, while subjects from divorced families are more common among higher frequency levels of delinquent behavior than is expected. The number of subjects in the "other" category was small (n = 16),

and, although the preponderance of subjects are in the two highest levels of frequency (more than 50 delinquent behaviors reported), no specific trend is evident. To further clarify this relationship, a second type of analysis of marital status, was performed. Two dichotomous $\underline{X}^2$ analyses of marital status were calculated to determine whether the differences found in the preceeding trichotomous $\underline{X}^2$ were were due primarily to the impact of divorce or the lack of a two parent household. The first analysis was intact first marriage versus other types of marital status and the second was two parent families (intact first marriages and remarriages) versus other marital statuses (see Table 5-2). Both comparisons resulted in statistically significant differences, ($\underline{X}^2$ [5] = 18.07, $\underline{p} < .01$, $\underline{C} = .23$ for intact versus other marital statuses ($\underline{X}^2$ [5] = 11.36, $\underline{p} < .05$, $\underline{C} = .18$ for two parent families versus others). A survey of the distribution of subjects across cells in Table 5-2 for the comparison of intact first marriage versus other statuses, reveals a trend of an increasing deviance of below expected frequency of subjects from intact families, as level of delinquent behavior increases. However, when two parent familes are compared to other marital statuses no clear trend is evident. A third analysis of marital status, to aid in development of the multivariate model, dichotomously classified subjects by whether or not they came from an intact (first marriage) family. A point biserial correlation between whether or not the family was intact and frequency, variety, and seriousness categorizations of DSRM responses was calculated to aid in understanding the relationship of these

Table 5-2

Chi-square Analyses of Marital Status and Frequency of DSRM Responses

Marital Status	0	1	2	3	4	5	Total
Trichotomous Grouping of Marital Status							
Intact	47	28	50	44	26	35	230
Divorced	9	15	10	22	15	20	91
Other	2	4	0	0	3	7	16
Total	58	47	60	66	44	62	337
X^2 (10) = 27.34, $p < .01$, $C = .27$							
Intact First Marriage Vs. "Other" Marital Status							
Intact	47	28	50	44	26	35	230
Other	11	19	10	22	18	27	107
Total	58	47	60	66	44	62	337
X^2 (5) = 18.07, $p < .01$, $C = .23$							
Two Parent Family Vs. "Other" Marital Status							
2 Parent Family	53	36	55	49	37	52	282
Other	5	11	5	17	7	10	55
Total	58	47	60	66	44	62	337
X^2 (5) = 18.07, $p < .01$, $C = .23$							

variables for use of marital status in multivariate models. As is indicated in Table 5-1 (page 140), living in an intact family correlates significantly and negatively with frequency categorization of DSRM responses, but not with variety and seriousness categorizations.

Family systemic variables were measured by scores on the ten subscales of the Family Environment Scale (FES). Pearson product-moment correlations (Table 5-1, page 140) between the subscale scores and the three categorizations of DSRM responses revealed that five of the ten subscales correlated significantly with frequency, variety, and seriousness of delinquent behavior (Conflict, Cohesion, Moral-Religious Emphasis, Intellectual-Cultural Orientation, and Organization). In addition, to the five subscales that correlated significantly to all three categorizations of DSRM responses, the Independence subscale correlated significantly to frequency categorization ($r = .15$, $p < .01$). Pearson product-moment correlations of the two factors derived by Fowler (1981) from the FES (organization-control, cohesion-conflict) and the three categorizations of DSRM responses were calculated (see Table 5-1, page 140). The organization-control factor correlated significantly to all three categorizations of DSRM responses. However, as only two of the four subscalesOrganization and Moral-Religous Emphasis) that make up this factor correlated significantly, with level of the categorizations of DSRM responses, and since three of the six subscales (Conflict, Cohesion, and Intellectual-Cultural Orientation) from the

cohesion-conflict factor, were individually correlated significantly to level of DSRM responses, even though the factor was not correlated significantly, Fowler's factors were not employed in further analyses and for the development of multivariate models of delinquent behavior.

Hypothesis Two

The second hypothesis stated that socioeconomic status would not correlate with self-reported delinquent behavior, but that there would be a small correlation with official status, and therefore, its utility for multivariate delinquency identification models would be limited. Also, it was hypothesized that a difference in socioeonomic status level on the five level index of social position (Hollingshead, 1957) between scores based on mother's and father's education and occupation levels would correlate to self-reported level of delinquent behavior. Results of the test(s) of each part of this hypothesis are reported separately.

Correlation of SES level and DSRM responses. Pearson product-moment correlations between each categorization of DSRM responses and socioeconomic status on the five level system of (Hollingshead & Redlich (Hollingshead, 1957) were calculated. This level was determined by averaging scores obtained based on maternal education and occupation, and paternal education and occupation. None of the correlations were significant and most were close to zero level.

Correlation of difference in paternal and maternal SES and DSRM responses. Pearson product-moment correlations between the absolute

value of the difference between parental and maternal score on the two factor index for socioeconomic status (Hollingshead, 1957) and level of self-reported delinquent behavior, according to each categorization method for DSRM responses found a negligible relationship.

Correlation of official status and socieconomic status. Pearson product-moment correlations between socioeoconomic status and total score on the official contact scale from the DSRM and number of court appearances were calculated. Additionally, point biserial correlations of whether or not a subject had appeared in court, and whether or not a subject had been adjudicated and SES level was also calculated. None of the indicators of official status correlated significantly to SES level.

Hypothesis Three

The third hypothesis stated that age of first reporting delinquent behavior on a nine item scale of onset of delinquent behaviors would correlate with level of self-reported delinquent behavior, across all three classification methods, and with official status. To test this hypothesis Pearson product-moment correlations were calculated between two indicators derived from the responses to the age of onset of delinquency scale and the three categorizations of DSRM responses, the official contact scale, and the number of court appearances. The two indicators derived from the age of onset scale were the youngest age checked for any offense on the scale, and the average age checked for first committing acts listed on the scale. Averages

were calculated using only those items checked as having been done by the subject at some point. Additionally, point biserial correlations between ever appearing in court and ever being adjudicated and the two indicators of age of onset were calculated. The results of calculations testing hypotheses three are presented in Table 5-3. The hypothesis was partially supported. Age of first reported delinquent behviavior on the age of onset scale correlated negatively and significantly with all three categorizations of DSRM responses. Also, age of first delinquent act correlated with score on the official contact scale. However, mean age of first committing the acts listed on the age of onset scale did not correlate with any indicators of delinquent behavior or status.

Hypothesis Four

The fourth hypothesis stated that level of self-reported delinquent behavior, categorized by frequency, variety, and seriousness, would correlate with official status. Pearson product-moment correlations were calculated between the three categorizations of DSRM responses and score on the official contact scale and number of court appearances (see Table 5-4). Score on the official contact scale correlated significantly with level of DSRM responses, across all three categorizations of DSRM responses. Point biserial correlations between each DSRM response categorization method and whether or not the subject had ever been adjudicated revealed a significant relationship between adjudication and variety of offenses reported. Additionally, correlations with the other two categorizations approach

Table 5-3

Pearson Product-moment Correlations Between Reported Onset of Delinquent Behavior and Level of Reported Delinquent Behavior on DSRM and Official Status Indices

Delinquency Measures	Age of Onset Scale Scores: Earliest Reported Act	Age of Onset Scale Scores: Mean Age of First Reporting Acts
DSRM Categories		
Frequency	-.52***	.04
Variety	-.52***	-.01
Seriousness	-.53***	-.09
Official Status Measures		
Official Contact Scale Score	-.16*	-.08
Ever in Court	-.06	.07
Number of Times in Court	-.08	.04
Adjudicated	.10	-.01

* $p < .01$

** $p < .001$

*** $p < .0001$

Table 5-4

Correlations of DSRM Categorizations and Official Status Measures

Official Status Measures	DSRM Categorizations		
	Frequency	Variety	Seriousness
Official Contact Scale Score	.25***	.19**	.27***
Number of Court Appearances	.05	.10	.05
Ever in Court	.05	.09	.04
Ever adjudicated	.12	.15*	.11

* $p < .01$

** $p < .001$

*** $p < .0001$

statistical significance (r = .12, p < .02 for frequency, and r = .11, p < .04 for seriousness).

Hypothesis Five

The fifth hypothesis stated that frequency, variety, and seriousness of self-reported delinquent behavior would be highly intercorrelated. Pearson product-moment correlations, calculated between each categorization method and the other two methods, show that all are highly correlated (see Table 5-5).

Hypothesis Six

Hypothesis six stated that a combination of variables with statistically significant individual correlations, to level of self-reported delinquent behavior in the low to moderate range of degeree, would when considered in combination, be able to account for a statistically significant and conceptually significant portion (30 percent or more) of the variance in level of frequency, variety, and seriousness of delinquent behavior. To test this hypothesis, the 14 individual, school and family variables identified as significantly correlated to level of self-reported delinquent behavior, in the test of hypothesis 1, were considered for inclusion in multiple regression models of self-reported delinquent behavior. Additionally, earliest age of reported delinquent behavior, which correlated significantly with level of delinquent behavior reported on the DSRM was considered for inclusion. As it is possible that several of the variables are highly intercorrelated, and therefore redundant, (defined as correlated

Table 5-5

Intercorrelations of DSRM Categorization Methods

	Frequency	Variety	Seriousness
Frequency	1.00	.78***	.72***
Variety		1.00	.80***
Seriousness			1.00

* $p < .01$

** $p < .001$

*** $p < .0001$

At or above a .85 level for this research), Pearson product-moment correlations were calculated between each variable and the other 14 variables. The intercorrelational matrix for these variables is reported in Table 5-6. Only grade and age were highly correlated ($r=.95$, $p < .0001$). Therefore, grade has not been used in the regression models in this research.

Frequency of delinquent behavior. The 15 independent variables were entered in a stepwise multiple regression in order of contribution to the overall regression model, against the dependent variable of frequency of DSRM responses. Collectively, the variables accounted for 45.64 percent of the variance which is significant at

Table 5 - 6

Intercorrelation Matrix of Independent Variables Considered for Inclusion in Multivariate Models

Variable	Grade	EAS Score	SSER Pr. Items	Plans More Education	Recorded GPA	Estimated Modal Grade	Disciplinary Actions	Intact Marriage	Cohesion	Conflict	Independent	Inc.- Cult. Orient	Moral - Rel. Emphasis	Organization	Age of First Offense
Age	.94***	-.01	.12	.03	-.04	.04	-.01	-.03	-.15*	-.16*	-.03	.11	-.08	-.14*	-.18**
Grade	1.00	-.03	.11	.06	.00	.07	-.03	.01	-.12	.17*	.21***	-.18**	-.04	-.12	-.16*
EAS Score		1.00	.01	-.15*	-.12	-.19**	.06	-.10	-.39***	-.39***	.16*	-.26***	-.18**	-.42***	-.22***
SSER Parent Items			1.00	-.08	-.08	-.01	.01	-.02	-.10	.06	.10	-.05	-.13	-.13	-.10
Plans More Education				1.00	.22***	.27***	-.19**	.13	.16*	-.09	-.03	.11	.20**	.11	.14*
Recorded Grade Average					1.00	.55***	-.30***	.04	.14*	-.02	.08	.01	.19**	.02	.12
Estimated Modal Grade						1.00	-.24***	.01	.18**	.11	.05	.10	.20**	.09	.18**
Disciplinary Actions							1.00	-.07	-.11	-.02	.03	-.08	-.12	-.09	-.06
Intact Marriage								1.00	.14*	-.08	-.08	-.03	.14*	.09	.14*
FES Subscales															
Cohesion									1.00	-.52***	.19**	.33***	.39***	.51***	.20**
Conflict										1.00	-.13	-.18**	-.21**	-.38***	-.33***
Independence											1.00	.02	-.04	.10	-.02
Inc.- Cult. Orient.												1.00	.17**	.25***	.11
Moral - Rel. Emphasis													1.00	.34***	.18**
Organization														1.00	.13
Age of First Offense															1.00

* $p < .01$
** $p < .001$
*** $p < .0001$

the .0001 level (F [15, 276] = 15.45). Table 5-7 lists the variables in order entered, the beta weight for each variable, and their relative contribution to the overall level of variance accounted for by the model. As can be observed from this table, reported age of first delinquent behavior, as measured by the early onset scale accounted for the largest portion of the variance, and the age of the subjects and (not) having plans for more education second and third respectively. School performance, as indicated by recorded grade average and estimated modal grade were entered last, and contributed the least to the overall variance accounted for by the model.

A MANOVA was performed to test the overall correlation of the 15 variable model to level of frequency of DSRM responses, and results indicate that the model is significant (F [75, 1307] , = 3.80, $p <$ .0001). Individual analyses of variance were then performed to determine the significance of the relationship of each variable, individually with level of frequency of DSRM responses excepting marital status (intact or not) and plans for more education (have or do not have such plans) which were analyzed by $X2$. Summaries of the results of the ANOVAs (Table 5-8) indicates all were significant at the .01 level except for the tests of the Independence and Organization subscales of the Family Environment Scale. However, the the test of the Organization subscale yielded an F value that approached significance (F [5, 330], = 2.45, $p <$ .03). More detailed presentation of ANOVA analyses are included in Table B-5, in Appendix B. The X^2 analysis of intact family versus other marital statuses has

Table 5-7

Multiple Regression Analyses for Categorizations of DSRM Responses

Variable	Frequency Rank	Frequency B-Value	Frequency r^2	Variety Rank	Variety B-Value	Variety r^2	Seriousness Rank	Seriousness B-Value	Seriousness r^2
Intercept		-.9105			2.4900			2.2174	
1st delinquent Behavior	1	-.2215	.27	1	-.2274	.35	1	-.2193	.28
Age	2	.0243	.13	5	.0054	.08	8	.0064	.06
Plans More Education	3	-.4625	.06	4	-.2690	.04	11	-.1458	.03
Moral-Rel. Emph.	4	-.0910	.07	3	-.0822	.07	3	-.0411	.06
EAS Score	5	.0321	.05	10	.0193	.06	5	.0237	.06
SSER Pt. Items	6	.0063	.07	9	.0027	.03	6	.0040	.03
Disciplin. Acts	7	.1230	.03	13	.0559	.02	7	.0794	.03
Conflict	8	.0461	.08	6	.0528	.09	15	.0021	.06
Independence	9	.0726	.02	7	.5540	.01	4	.0594	.02
Organization	10	.0555	.03	11	.0470	.03	13	-.0138	.01
Cohesion	11	-.0285	.06	15	.0039	.05	12	.0317	.01
Intact Marriage	12	-.0761	.02	14	-.0910	.01	14	-.0193	.01
Int.-Cult. Or.	13	-.0147	.04	2	-.0900	.06	2	-.0063	.04
Recorded GPA	14	.0029	.02	12	.0358	.03	9	.0184	.01
Estim. Modal Grade	15	-.0142	.02	8	-.2119	.02	10	-.1347	.01
Total Variance			.46			.45			.36

Table 5-8

Summaries of ANOVAs of Variables in Regression Models of DSRM Responses

Variable	F Values		
	Frequency	Variety	Seriousness
Age	10.90***	6.73***	5.20**
Age of first Offense	33.52***	44.64***	44.07***
EAS Score	4.04**	6.43**	5.73**
SSER Parent Items	4.82**	4.13*	3.20*
Recorded GPA	3.22*	4.13*	1.30
Est. Modal Gr.	2.81	1.68	2.90
Disciplinairy Acts.	6.03***	2.43	3.16*
Conflict subcale	6.68***	8.77***	4.91**
Cohesion subscale	6.67***	5.95***	3.04*
Organization subscale	2.45	3.63*	3.77*
Intellect.-Cultural Orientation subscale	3.18*	8.34***	4.10**
Moral-Religious Emphasis subscale	5.91***	6.21***	4.93**
Independence subscale	1.69	.89	1.54

* $p < .01$

** $p < .001$

*** $p < .0001$

already been reported as part of the test of hypothesis one, and revealed a significant relationship between whether or not a family is intact and level of frequency of DSRM responses ($\underline{X}^2$ [5] = 18.07, $\underline{p}$ < .01, $\underline{C}$ = .23), with a greater than expected occurrence of non-intact families among subjects reporting frequent delinquent behavior (see Table 5-2, p. 144). $\underline{X}^2$ analysis of subjects classified by whether or not they reported plans for more education and frequency of DSRM responses indicates a significant relationship ($\underline{X}^2$ [5] = 23.20, $\underline{p}$ < .001, $\underline{C}$ = .27). A review of the $\underline{X}^2$ distribution (Table 5-9) indicates that there is a greater than expected proportion of subjects not planning more education among the higher frequency levels of DSRM responses.

Each of the twelve variables which demonstrated an individual correlation to level of frequency of DSRM responses by an ANOVA was further analyzed by applying the Scheffe method to test for significant differences in means of levels of frequency of delinquent behavior. The Scheffe method uses a single range value for all simultaneous comparisons to limit the likelihood of obtaining erroneous significance due to repeated comparisons, and is considered the strictest and most appropiate test for comparing cells with unveven group sizes, as is the case here (Needer & Wasserman, 1974). Table 5-10 presents results of the Scheffe analyses of the independent variables. Interpetations of these results are presented in the discussion chapter.

Table 5-9

Chi-Square Analysis of Planning More Education
by Categorizations of DSRM Responses

Plans	0	1	2	3	4	5	Total
	Level of Frequency of DSRM Responses						
Plans More Education	45	30	41	40	27	22	205
Does Not Plan More Education	7	12	14	17	12	28	90
Total	52	42	55	57	39	50	295

X^2 (5) = 23.20, $p < .001$, $C = .27$

	Level of Variety of DSRM Responses					
Plans More Education	41	22	30	52	60	205
Does Not Plan More Education	4	6	16	22	42	90
Total	45	28	46	74	102	295

X^2 (4) = 16.90, $p < .01$ $C = .24$

	Level of Seriousness of DSRM Responses					
Plans More Education	23	11	44	43	74	205
Does Not Plan More Education	4	6	14	19	47	90
Total	45	28	46	74	102	295

X^2 (4) = 12.03, $p < .01$ $C = .20$

Table 5-10

Scheffe Analysis of Independent Variables By Frequency Categorization of DSRM Responses

Variable	Level Mean	Level	Level of Frequency					
Age			0	1	2	3	4	5
	13.99	0						
	14.41	1						
	14.38	2						
	15.10	3	*					
	15.65	4	*	*	*			
	15.65	5	*	*	*			
EAS Score			0	1	2	3	4	5
	11.34	0						
	12.74	1						
	12.87	2						
	13.85	3						
	13.20	4						
	15.62	5	*					
SSER Parent Items			0	1	2	3	4	5
	49.22	0						
	46.38	1						
	57.73	2						
	54.27	3						
	68.63	4	*	*				
	67.65	5	*					
Recorded		0	1	2	3	4	5	
Grade Average	2.45	0						
	2.34	1						
	2.58	2						
	2.40	3						
	2.30	4						
	2.12	5		*				
Estimated Modal			0	1	2	3	4	5
Grade	2.78	0						
	2.47	1						
	2.50	2						
	2.45	3						
	2.55	4						
	2.99	5	*					

Table 5-10 (continued)

Variable	Level Mean	Level	Level of Frequency
Disciplinary Actions			0 1 2 3 4 5
	.69	0	
	.81	1	
	.53	2	
	.52	3	
	.66	4	
	1.76	5	* * * *
Cohesion Subscale			0 1 2 3 4 5
	7.21	0	
	6.20	1	
	6.70	2	
	6.24	3	
	6.32	4	
	5.13	5	* * * *
Conflict Subscale			0 1 2 3 4 5
	2.26	0	
	3.13	1	
	3.37	2	
	3.45	3	
	3.84	4	*
	4.40	5	*
Intellectual-Cultural Orientation Subscale			0 1 2 3 4 5
	4.58	0	
	4.24	1	
	3.88	2	
	3.92	3	
	4.11	4	
	3.24	5	*
Moral-Religious Emphasis Subscale			0 1 2 3 4 5
	6.90	0	
	6.57	1	
	6.00	2	
	5.86	3	*
	5.27	4	* *
	5.56	5	* *

Table 5-10 (continued)

Variable	Level Mean	Level	Level of Frequency
Organization Subscale			0 1 2 3 4 5
	5.91	0	
	5.29	1	
	5.67	2	
	5.21	3	
	5.23	4	
	4.72	5	*
Age of First Offense			0 1 2 3 4 5
	.63	0	
	13.62	1	*
	12.62	2	*
	12.18	3	*
	11.50	4	* *
	11.47	5	* *

*level means are significantly different at $p < .05$.

Variety of delinquent behavior. Stepwise multiple regression analysis of the 15 variable model run against the variety categorization of DSRM responses yielded a statistically significant model (F [15, 276] = 14.92, $p < .0001$), that could account for 44.83 percent of the variance. The order of entrance of the variables, their beta weights, and relative contributions to the overall variance accounted for by the model are included in Table 5-5. As can be observed, age of first delinquent behavior was entered first and accounted for the largest portion of the variance, followed by the Intellectual-Cultural Orientation and Moral-Religious subscales of the Family Environnment Scale, entered second and third. Whether or not the parents' marriage was intact and score on the Cohesion subscale of the Family Environment Scale were entered last, contributing the smallest amount to the overall variance.

A MANOVA of the 15 variable model's ability to differentiate levels of variety of delinquent offense types, indicates that the model significantly correlates with level of DSRM responses (F [60, 1067] = 5.25, $p < .0001$). Seperate ANOVAs of each variable except marital status and plans for more education were performed. Marital status and plans for more education were analyzed by $X2$. The ANOVAs (see Table 5-8) reveal that ten of the independent varables, individually, were related significantly to level of variety of offenses reported on the DSRM; age of subject, age of first offense, score on the Emotional Adjustment Scale, score on the parent items of the Social Skills Self Efficacy Report, estimated modal grade, and

scores on the Conflict, Cohesion, Organization, Intellectual-Cultural Orientation, and the Moral-Religious Emphasis subscales of the Family Environment Subscale. The $\underline{X}^2$ analysis of whether or not the parents' marriage was intact was not significant ($\underline{X}^2$ [4] = 3.86, $\underline{p} < .43$, $\underline{C}$ = .11). $\underline{X}^2$ analysis of future plans (more education versus other types of plans) indicates that planning for more education is related to variety of delinquent behavior ($\underline{X}^2$ [4] = 16.90, $\underline{p} < .01$, $\underline{C}$ = .23). As can be observed in Table 5-9, a greater than expected proportion of subjects reporting future plans other than obtaining more education are found among the higher levels of variety of DSRM responses.

The results of the Scheffe test for difference in means of levels of variety of DSRM responses are presented in Table 5-11, and the meaning of the results are interpeted in the discussion chapter.

Seriousness of delinquent behavior. Stepwise multiple regression analysis of the 15 variable model produced a model that accounted for 36.46 percent of the variance in seriousness of delinquent behavior, which is statistically significant ($\underline{F}$ [15, 276] = 10.56, $\underline{p} < .0001$). The variables and their respective beta weights and contributions to the overall variance are presented in Table 5-7. Age of first offense was entered first into the regression and accounted for the largest proportion of the variance, followed by scores on the Intellectual-Cultural Orientation and Moral-Religious subscales of the Family Environment Subscale. Whether or not the parents' marriage was intact and score on the Conflict subscale of the Family Environment

Table 5-11

Scheffe Analysis of Independent Variables By Variety Categorization of DSRM Responses

Variable	Level Mean	Level	Level of Variety
Age			0 1 2 3 4
	14.10	0	
	13.97	1	
	15.09	2	
	15.01	3	* *
	15.17	4	* *
EAS Score			0 1 2 3 4
	11.40	0	
	13.58	1	
	12.70	2	
	13.90	3	
	14.89	4	*
SSER Parent Items			0 1 2 3 4
	49.02	0	
	47.55	1	
	59.70	2	
	53.42	3	
	65.22	4	*
Estimated Modal Grade			0 1 2 3 4
	2.80	0	
	2.73	1	
	2.56	2	
	2.38	3	*
	2.37	4	*
Cohesion Subscale			0 1 2 3 4
	7.22	0	
	6.39	1	
	6.56	2	
	2.38	3	*
	2.37	4	*

Table 5-11 (continued)

Variable	Level Mean	Level	Level of Variety				
Conflict Subscale			0	1	2	3	4
	2.23	0					
	2.91	1					
	3.16	2					
	3.36	3	*				
	4.20	4	*	*			
Intellectual-Cultural			0	1	2	3	4
Orientation Subscale	4.98	0					
	3.76	1					
	4.14	2					
	4.31	3					
	3.29	4	*		*		
Moral-Religious Emphasis			0	1	2	3	4
Subscale	6.92	0					
	6.48	1					
	6.33	2					
	5.81	3	*				
	5.56	4	*				
Organization Subscale			0	1	2	3	4
	5.98	0					
	5.15	1					
	5.61	2					
	5.56	3					
	4.84	4	*				
Age of First Offense			0	1	2	3	4
	.65	0					
	14.36	1	*				
	13.00	2	*				
	12.29	3	*	*			
	11.45	4	*	*	*		

*level means are significantly different at $p < .05$.

Scale were entered last, contributing the lowest proportions of variance accounted for by the model.

MANOVA test of the model indicates that the 15 independent variables, in combination, significantly relate to level of seriousness of delinquent offenses (F [60, 1067] = 4.05, $p < .0001$). Individual ANOVAs (Table 5-8) indicate age of subject, age of first offense, score on the Emotional Adjustment Scale, score on the parent items of the Social Skills Self Efficacy Report, number of disciplinary actions, and scores on the Conflict, Organization, Intellectual-Cultural Orientation, and Moral-Religious Emphasis subscales of the Family Environment Subscale were independently significantly related to level of seriousness of DSRM responses. X^2 analysis of whether or not the parents' marriage is intact found that seriousness of delinquent behavior is not significantly related to coming from a family without an intact marriage (X^2 [4] = 3.16, $p = .53$, $C = .10$). As with the the other two categorizations, X^2 analysis (Table 5-9) revealed a significant relationship between plans for more education and seriousness of delinquent behavior (X^2 [4] = 12.03, $p < .01$, $C = .20$). Examination of the distribution of subjects across cells, reveals that a greater than expected proportion of subjects reporting plans other than continuing their education are among the categories reflecting more serious DSRM responses. Scheffe analysis of each variable that yielded a significant ANOVA are presented in Table 5-12.

Table 5-12

Scheffe Analysis of Independent Variables By Seriousness Categorization of DSRM Responses

Variable	Level Mean	Level	Level of Variety
Age			0 1 2 3 4
	13.88	0	
	15.03	1	
	14.73	2	
	14.83	3	
	15.17	4	*
EAS Score			0 1 2 3 4
	10.38	0	
	13.11	1	
	12.27	2	
	13.59	3	
	14.60	4	*
Cohesion Subscale			0 1 2 3 4
	7.24	0	
	6.24	1	
	6.26	2	
	6.07	3	
	6.02	4	*
Conflict Subscale			0 1 2 3 4
	2.19	0	
	3.35	1	
	3.16	2	
	3.78	3	*
	3.72	4	*
Intellectual-Cultural Orientation Subscale			0 1 2 3 4
	4.83	0	
	4.35	1	
	4.29	2	
	4.81	3	
	3.61	4	*

Table 5-12 (continued)

Variable	Level Mean	Level	Level of Variety
Moral-Religious Emphasis Subscale			0 1 2 3 4
	6.72	0	
	6.47	1	
	6.58	2	
	5.73	3	
	5.69	4	* *
Age of First Offense			0 1 2 3 4
	.12	0	
	14.50	1	*
	13.81	2	*
	13.00	3	* *
	11.84	4	* * *

*level means are significantly different at $p < .05$.

Application of Multivariate Models for Categorizing Subjects

The second guiding interest of this research was to test the classification accuracy of multivarate models of delinquent behavior, based on individual, school, and family varables. In order to examine this matter, multivariate models developed to discriminate older subjects (ages 15 to 18) who report frequent (defined for this hypothesis test as more than 50 total offenses reported DSRM), a wide variety (defined as more than 2 types of offenses), and serious delinquent behavior (defined as reporting a felony on the DSRM), from those reporting relatively less frequent (less than 50 total items on the DSRM), less variety of (two or less types of offenses), and less serious delinquent behaviors(no felonies reported), were applied to younger adolescents (ages 11 to 13). It was hypothesized that since delinquent behavior is less common among younger adolescents, any exhibition of delinquent acts in this age group would be comparable to high frequency, variety, and serious delinquent behavior among older adolescents. Therefore, the dichotomous classification levels for the three methods of categorizing DSRM responses were defined more conservatively for younger adolescents. For this group of subjects, high frequency was defined as more than two total responses to DSRM items, high variety was defined as reporting any offense other than status offenses, and high seriousness was defined as reporting misdemeanors or felonies. Table 5-13 shows the distribution of subjects by age group and levels for each categorization method.

Table 5-13

Distribution of Subjects By Age Group and Dichotomous Levels of DSRM Responses

DSRM Categorization	Age Group	
	Older (age 15-18) n = 198	Younger (age 11-13) n = 72
Frequency[1]		
high	84	31
low	114	41
Variety[2]		
high	136	50
low	62	22
Seriousness[3]		
high	141	50
low	57	22

[1]For older group, subjects reporting more than 50 total DSRM responses were classified high frequency. For younger group, those reporting more than one DSRM response were classified high frequency.

[2]For older group, subjects reporting more than two types of offenses were classified high variety. For younger group, those reporting any offense types other than status offenses were classified high variety.

[3]For older group, those reporting any felonies were classified high seriousness. For yonger group, those reporting any offenses other than status offenses were classified high seriousness.

Hypothesis Seven

After the categorization methods had been dichtomized, 13 of the 15 independent variables utilized in the previous multivariate analysis were entered into stepwise discriminant analyses for each DSRM categorization method, using the sample subjects between ages 15 and 18. Two of the independent variables, age of subjects, and age of first reported delinquent behavior, were not included in the discriminant analysis due to the apriori division of groups by age (older and younger), and the present emphasis on testing the application of the discriminant functions developed on older adolescents to younger adolescents. Table B-6, in Appendix B, lists correlations between the 15 independent vairables used in the discriminant analyses and the three dichotomized categorization methods for DSRM responses, for the older subjects. Table B-7 in Appendix B, list correlations between the 15 independent variables and categorization methods, for the younger subjects. Results of the discriminant analysis and subsequent classification of older and younger adolescents for each method of categorizing DSRM responses are reported sequentially.

Frequency. The 13 independent variables were entered into a discriminant analysis using a stepwise variable selection process, Wilks lambda (F to enter and F to discard were zero). The discriminant function based on the 13 variables resulted in an overall Wilks' lambda of .796, which converted to an F (13, 184) = 3.63, $p < .0001$. Table 5-14 contains the 13 variables in their order of entrance into the discriminant function, and lists corresponding standardized

Table 5-14

Discriminant Functions for Older Subjects

	Frequency		Variety		Seriousness	
Variable	Rank	Coeffic.[1]	Rank	Coeffic.[1]	Rank	Coeffic.[1]
Disciplinary Acts	(1)	.5276	(4)	-.2091	(4)	.2534
Moral-Religous Emp. Subscale	(2)	-.4058	(1)	.5022	(1)	-.6790
Conflict Subscale	(3)	.3479	(3)	-.3640	(7)	.3223
Plans More Education	(4)	-.3138	(8)	-.1415	(8)	.1952
Intact Marriage	(5)	-.2346	(9)	.0659	(11)	-.1137
Independence Subscale	(6)	.2467	(6)	-.1976	(6)	.1977
Recorded GPA	(7)	.1435	(13)	-.0107	(5)	.2976
Cohesion Subscale	(8)	-.2668	(11)	.0352	(9)	.2223
Organization Subcale	(9)	-.1409	(10)	.0271	(12)	.1124
Estimated Modal Grade	(10)	.1163	(2)	.4207	(10)	-.1430
SSER Parent Items	(11)	.0876	(7)	.1503	(3)	.2636
EAS Score	(12)	.0452	(12)	-.0171	(13)	-.0951
Intellectual-Cultural Orientation Subscale	(13)	-.0082	(5)	.2039	(2)	-.2567

[1]Standardized canoninical coefficents

canonical coefficients for each variable. As can be observed, the largest relative contribution to the discrimination was from number of disciplinary actions in school, followed by score on the Moral-Religious Emphasis and Conflict subscales of the Family Environment Scale. The score on the Emotional Adjustment Scale and recorded grade average contributed the least to the discriminant function.

The 13 variable combination classified 68.69 percent of the older adolescent subjects accurately (see Table 5-15). Although 25.4 percent of the low frequency subjects were classified inaccurately as high frequency delinquents by the discriminant function, 39.3 percent of the actually high frequency delinquent subjects were classified as low frequency delinquent. The model correctly classified 88.0 percent of the low frequency delinquents, but it only correctly classified 32.8 percent of the subjects from this age group who were high frequency delinquents.

Variety. The 13 variables were entered into a stepwise discriminant analysis to distinguish higher versus lower variety of reported delinquent behavior for the older subjects, the discriminant function, yielded a significant overall Wilks' lambda of .802 (F [13, 184] = 3.49, $p < .0001$). A review of the standardized canonical coefficients and order of variable entrance (Table 5-14) indicates that the Moral-Religious subscale of the Family Environnment Scale and estimated modal grade contributed the largest portion of the overall variance. Score on the Emotional Adjustment Scale and recorded grade

Table 5-15

Classification of Subjects by Discriminant Function, Frequency Classification

Older Subjects				Younger Subjects			
		Predicted				Predicted	
Actual		Low	High	Total	Actual	Low	High	Total
Low	n	85	29	11	Low n	22	3	25
	%	74.6	25.4		%	88.0	12.0	
High	n	33	51	81	High n	29	18	47
	%	39.3	60.7		%	61.7	38.3	
68.69% correctly classified					63.60% correctly classified			

point average were entered last, contributing the smallest portion of the overall variance.

The 13 variable discriminant function was able to classify 70.71 percent of the older subjects and 56.4 percent of the younger subjects accurately (see Table 5-16). Among both groups the model classified low variety subject more accurately than high variety subjects. Although 74.2 percent of the older and 72.7 percent of the younger subjects in the low variety groups were acccurately classified, only 69.1 percent of the older subjects and 40.0 percent of the younger subjects from the high variety groups were accurately classified.

Table 5-16

Classification of Subjects by Discriminant Function, Variety Classification

Older Subjects				Younger Subjects			
		Predicted				Predicted	
Actual		Low	High	Total	Actual	Low	High	Total
Low	n	46	16	62	Low n	16	6	22
	%	74.2	25.8		%	72.7	27.3	
High	n	42	94	136	High n	30	18	50
	%	30.9	69.1		%	60.0	40.0	
72.70% correctly classified					27.30% correctly classified			

Seriousness. The 13 variables were entered into a stepwise discriminant analysis, and the resulting discriminant function yielded a significant overall Wilks' lambda of .826, which converts to an F (13, 184) = 2.98, $p < .001$. Table 5-14 includes the 13 variables, their order of entrance, and the standardized canonical coefficients for each variable. As can be observed, the Conflict and Moral-Religious Emphasis subscales of the Family Envrionment Scale contributed the largest proportion of the variance accounted for by the model.

The 13 variable discriminant function accurately classified 66.67 percent of the older subjects and 73.80 percent of the younger subjects (Table 5-17). Among the older subjects, 71.9 percent of the

subjects in the less serious category were accurately classified, while 64.5 percent of the high seriousness subjects were accurately classified. For the younger adolescents the discriminant function was able to classify 82.6 percent of the low seriousness subjects and 44.9 percent of the high seriousness subjects.

Table 5-17

Classification of Subjects by Discriminant Function, Seriousness Classification

	Older Subjects				Younger Subjects		
	Predicted				Predicted		
Actual	Low	High	Total	Actual	Low	High	Total
Low n	41	16	57	Low n	19	4	23
%	71.9	28.1		%	82.6	17.4	
High n	50	91	141	High n	27	22	49
%	35.5	64.5		%	55.1	44.9	
66.67% correctly classified				73.80% correctly classified			

CHAPTER VI

DISCUSSION

The purpose of this study was to examine the impact of the application of multivariate methods of analysis and design to examine the relationship between individual, school, and families variables, and measure of socioeconomic status and age of onset of delinquent behavior, individually and collectively, with level of self reported delinquent behavior, in order to provide a basis for developing useful models for identification as well as the efficacy of methodologically sound designs. In order to do so, seven hypothesis were tested, and three methods of categorizing delinquent behavior were used. These categorization methods were by total frequency of delinquent acts (frequency), by the number of types of offenses reported (variety), and by the most serious (frequency) offense reported. Additionally, official legal status was measured by a self report measure and official juvenile court records. The test of the seven hypotheses and the results obtained are reviewed below in separate sections corresponding to four topics. The sections are labeled individual correlations of the independent variables, the multiple regression models and interrelatedness of the variable, the discriminant analysis of the thirteen variable models for older and younger subjects, and the methods of measuring delinquent behavior and delinquency status. Subsequent to reviewing these topics and summarizing the findings, the limitations of the study and implications for future research and for delinquency policy are discussed.

Review of the Research

Individual Correlations

It was hypothesized that a variety of individual, school, and family functioning variables would correlate at statistically significant, but low to moderate absolute levels with level of self-reported delinquent behavior across all three categorizations of DSRM responses. This hypothesis was supported in part. Age of subject, three of eight individual (score on Emotional Adjustment Scale, score on parent items of Social Skills Self Efficacy Report, and plans for more education), two of seven school performance (recorded grade point average, estimated modal grade), one of five school behavior (number of disciplinary actions), one of three family structure (intact marriage), and six of ten family systemic functioning (Conflict, Cohesion, Organization, Moral-Religoius Emphasis, Intellectual-Cultural Orientation, Independence) measures correlated at or near significance level of $p < .01$, with frequency, variety, and seriousness categorizations of DSRM responses. Correlations of these significant variables ranged from -.12 to .36. These results suggest, in general, that no single variable correlates with delinquent behavior to a degree that supports sole reliance on that variable for discriminating and identifiying delinquents. However, the relationship (or lack of) between specific variables and self-reported delinquency clarifies what aspects of functioning are likely to prove most useful in identification research.

Age of subject. The results showed a correlation between age of subject and reported delinquent behavior, with frequency, variety, and seriousness of delinquency increasing as age increases. A review of the this pattern, suggest that while delinquent behavior is relatively uncommon among early adolescents, by midadolescence it is so prevalent that the absence of any delinquent behavior is noteable. At about age 15 there seems to be a plateau in the rate of increase, with a relatively even rate past this age, suggesting this is the time of greatest increase in prevalence. These findings are congruent with patterns reported by others who have used self-report (Hindelang, et al., 1981; Simcha-Fagan, 1979), and with official statistics (Empey, 1978).

This pattern indicates that by about age 15 some exhibition of delinquent behavior is common, and often a variety of offenses and/or serious offense are committed. Gold & Petronio (1981) suggest this appearance of "normal" delinquent behavior around this age represents a developmental change following puberty, in which increased interest in experimentation in many areas of psychosocial functioning, including adherence to social rules and laws emerges. As examples of this general developmental change, Gold & Petronio cite increased interest in social activities such as dating and flexibility of morality about deviant acts. Similarly, Erickson (1968) characterized this point in development as a time for "trying on" psychosocial roles and values, to test the "fit", as though one were shopping for a wardrobe. He considers this experimentation adaptive, as it allows for practicing of impending adult social roles, and internalization of social values

and roles. In the context of these observations, the correlation of age and delinquent behavior suggest, that for a large segment of the adolescent population, delinquent behaviors are a byproduct of normal social experimentation, are probably transient, and perhaps, to some extent, serve an adaptive purpose.

However, there is another segment of the 15 to 18 year old subjects, who tended to be in the most frequent, largest variety, and the most serious offense categories, and who tend to report early onset of delinquent behavior. This segment may represent a different type of delinquency from the majority of delinquent subjects, in that, their delinquency is not transient or developmentally based (Wolfgang et al 1972). Apparently, by midadolescence, these subjects are very actively delinquent, and this contributes to a correlation between age and delinquent behavior. Thus, the correlation between age and delinquent behavior actually reflects ongoing but increasing delinquency of early delinquents and the onset of delinquent behavior in a second group who are exhibiting a developmental (and probably transient) interest in testing the limits of social mores. Differentiation of these two groups depends less on age than on age of onset of delinquent behavior. By itself age seems of little use for identification efforts, as most are aimed at early adolescents, but in combination with other variables, in particular age of onset of delinquent behavior, age may be useful for distinguishing transient delinquents from chronic delinquents.

Age of onset. As mentioned above, among this study's sample, age of onset of delinquent behavior correlated with level of reported delinquent behavior. In fact, it was the most highly correlated variable found. These results suggest that the adolescents engaging in delinquent behavior earlier in life, are likely to be more frequently, indiscriminantly, and seriously delinquent. Additionally, the present results indicate they are more likely to report police contact than other delinquents. It appears that an early exhibition of delinquent behavior is related to chronicity of delinquent behavior, and is a most useful variable for identifying delinquents who are at-risk for serious delinquency.

The correlations of age and age of onset with reported delinquent behavior suggest that early adolescence may be a "critical period" (Hobbs & Robinson, 1982) in development of social values and presents an oppurtune time for identification of at-risk populations to facilitate preventive interventions. At this age, delinquent behavior is less prevalent, and its presence at this time seems to predict high level delinquent behavior subsequently. Identification of at-risk populations during early adolescence may prevent further and more serious delinquent behavior. Additionally, it seems that at this point in development a majority of adolescents will imminently exhibit some delinquent behavior, and primary prevention efforts such as education about social responsibility and enhacement of productive exploration and clarification of personal values, during this age span might limit the extent of delinquent behavior engaged in by the "developmental" delinquents.

Individual variables. This study included three measures of individual functioning that correlated significantly with level of reported delinquent behavior across all three categorization methods.

Score on the Emotional Adjustment Scale correlated positively with all three categorizations of delinquent behavior, with adolescents reporting internal emotional distress also reporting more delinquent behavior. It appears that among this sample, felt emotional problems and anxiety are related to increased delinquent behavior. These results differ from those reported by Simcha-Fagan (1979) who found a significant relationship between lack of anxiety and an "uncompulsive' character and level of delinquent behavior. These two characteristics describe emotional states almost the opposite of those correlating with delinquent behavior in the present study. The discrepancy in results of the two studies may be due to focus on different characteristics in the measures employed by each study. Simcha-Fagan interviewed mothers, with a focus on the presence or absence of anxiety and "uncompulsive" character, but did not probe for the types of concerns tapped by the measure used in the present research (the EAS). Thus, her interview focus made it unlikely that she would find a correlation between emotional distress and delinquent behavior. Similarly, the use of the EAS in the present study, precluded measuring of characteristics similar to those investigated by Simcha-Fagan. Apparently, the two studies tapped two emotional character styles common among delinquents, but not common to all delinquents. It is noteable, that the types of character tapped by the present research and Simcha-Fagan (1979) correspond to two of the

three delinquent character types outlined by Quay & Peterson (1975). While Simcha-Fagan seems to have tapped characteristics associated with the unsocialized unsocialized-psychopathic type, the present study probably tapped the neurotic-immature type. It appears presumptious to consider delinquents homgeneous as to emotional state or character type. It is likely that several types of emotional problems can result in delinquent behavior, depnding on an interaction of character and several other variables (Marohn, 1979; Offer et al., 1979). Measures that tap a wide range of emotional characteristics to simultaneously assess several "types" of delinquent characters are likely to yield a fuller explanation of the uniformity of emotional character in delinquent and identify any emotional characteristics common to all delinquents.

However, a correlation between reported emotional distress and delinquent behavior does not necessarily imply that emotional "character" causes delinquent behavior. The evidence for the importance of character in the development of delinquency comes from other sources. Olweus (1979) reported that a path analysis of variables influential on childhood aggressivenss, indicated that an interaction of the child's temperaments (defined as tendency toward temper tantrums) and the mother's negativism (defined as her basic emotional attitude toward the child during the first 4-5 years) were the primary components in the causal pathway toward excessive aggressiveness. Loeber (1982) and Patterson (1981) suggest that relative level of aggression is consistent enough over time to be considered a trait, and that

aggressive children are often later delinquent. Loeber (1982) suggest there is evidence that childhood aggressiveness is antecedent to delinquency in adolescence. Similarly, Thomas, Chess & Birch (1968) reported a difficult temperament correlated with childhood behavioral problems including delinquency. Viewed in the context of this research, the correlation found between individual emotional adjustment and level of delinquent behavior may reflect an interaction of temperamental predisposition that increases the risk for problems including delinquent behavior. However, this does not mean that aggressiveness is the only characteristic leading to delinquency. For example, Moore et al. (1979) reported that some children have "covert" behavior patterns (e.g. stealing), that seem stable over time and predictive of later delinquency. Among the present study's sample, EAS score correlated with dichotomous classification of subjects into high and low groups among the younger subjects, but not among the older subjects, suggesting that emotional character may be more influential when delinquency is exhibited early, whereas later onset of delinquent behavior may be less dependent on emotional well-being. Early identification efforts may want to consider emotional temperament more fully in attempting to assess risk for delinquency.

Of the four types of interactions included on the Social Skills Self Efficacy Report, only the items reflecting interactions with parents correlated with level of reported delinquent behavior, and unxepectedly, the correlation was positive. Subjects' felt ability to argue with and openly question parental authority was related to level

of reported delinquent behavior. These results seem to have two implications for the delinquency identification research. The first is that delinquent behavior is related to interactions with parents, whereas it is unrelated to self efficacy about interactions with teachers, peers, and strangers. This suggest that the parent-child relationship is an important influence on level of delinquent behavior, while the quality of peer relationships, ability to interact competently with authority (in the form of teachers) or a general lack of social skills do not differentiate delinquents from their nondelinquent peers. Ability to differ with one's parents is consistent with another correlation found in this study, between intrafamilial conflict and level of reported delinquent. This correlation of the parent items with delinquent behavior seems to reflect family conflict mote than actual social skill, and researchers interested in applying a social skills approach to delinquent behavior may want to focus on parent-child interactions rather than peer or teacher interactions, or general social skills training.

The second implications of the correlation between the parent items and reported level of delinquent behavior is that reported confidence in one's ability to speak assertively, does not appear to be a useful discriminator of delinquents and delinquent prone subjects. However, it may be that delinquents may oversestimate their social skill, and reported ability and actual behavior are less congruent among delinquents than among nondelinquent adolescents.

Delinquents may be discriminable based upon actual behavior in social situations, while indistinguishable by self-report.

A relatively high negative correlation was found between the third significant variable indicative of individual functioning, plans for more education and delinquent behavior, and this result can be interpeted several ways. The correlation could reflect a lower self esteem and lower expectations for the future among those reporting higher level of delinquent behavior, as has been suggested by Rosenberg & Rosenberg (1978). However, it appears that the relationship between self esteem and level of delinquent behavior is more complex than a simple one way cause-effect relationship, as self esteem can fluctuate over time, and delinquency and level of self esteem have been found to interact (Byner, O'Mally, & Bachman (1981). A second interpetation of the correlation between future plans and level of delinquent behavior follows the academic deficeincy hypothesis reviewed earlier (Berman & Siegal, 1976). Adolescents with less interest in education may be less academically competent, and therefore, do not expect to continue their education beyond high school. Academic deficiency may increase the risk for delinquent behavior, and the correlation reflects this relationship. Simcha-Fagan (1979) reported that dropping out of school contributed significantly with level of reported delinquent behavior. Also, in the present study, school performance as measured by grade point average, correlated negatively with level of delinquent behavior, and positively with plans for more education ($r = .22$, $p < .001$), suggesting that a lack

of academic success decreases interest in continuing educational activities, and also relates to increased likelihood of delinquent behavior. A third interpetation of the found correlation between future plans and level of reported delinquent behavior is that subjects not planning to continue their education are more confused about their future expectations, as well as other areas of their life and delinquent behavior is one effect of this confusion. There appears to be more evidence supporting this interpetation than the other two interpetations. Douvan & Adelson (1966) reported that clarity of future plans was related, negatively, with level of maladjustment among adolescents. Murphy & Shinyai (1976) carried out behavioral observations of delinquents and nondelinquents and reported that while the two groups could not be differentiated by level of illegal behavior, the "nondelinquents" engaged more in prosocial and socially acceptable activities such as education more often. Massimo & Shore (1963; Shore and Massimo, 1979) found that when provided psychotherapy, which foucused on integrating vocational and personal self esteem, including providing practical advice to helped clients obtain training and jobs, delinquents' self esteem increased, and their delinquent behavior decreased. Gains by these subjects were maintained over long periods of time, suggesting clarity of educational/vocational goals may be one variable that has important identification and prevention planning implications.

Which of these interpetations represents the "real" meaning of the correlation found is not determinable at this time. It is likely

that for different subjects each interpetation is most accurate. In its present form, and as analyzed, future plans seems to be one variable useful for differentiating delinquents from nondelinquents. More specific questioning concerning level of aspiration, clarity of plans, and the realism of the plans may specify how future expectations relate to level of delinquent behavior, and clarify how perceived future expectations can be useful for identifying delinquents.

The individual variable that did not correlate to level of delinquent behavior was number of trusted friends. This results suggest that a simple count of number of friends is not useful for identifying delinquents. However, more specific questions, such as percentage of friends involved in delinquent behavior,the precentage of time sent with delinquent versus nondelinquent peers, the time spent with family versus peers, and the saliency of peer relationships may yield results that are useful for identifying delinquents.

In summary, the correlations of individual variables suggest that emotional well being and expectations for the future may be the most fruitful areas of individual functioning to pursue in identification research. Other research and the present findings suggest that an interaction of individual character or temperament with other variables may provide discriminating information. However, it is also apparent that delinquents are not a homogeneous group on any individual characteristics and therefore, prediction efforts will need to specify what aspect of delinquency they want to identify or else include the expectation of a variety of antecedent conditions for

different delinquents. Finally, the level of correlations found here suggest that individual functioning alone is not a sufficient basis for identifying delinquents, but in combination with other variables can be the basis for utilitarian and methodologically sound models.

School variables. Three school variables, recorded grade point average, estimated modal grade and number of disciplinary actions correlated at or near a significant level with the categorizations of delinquent behavior. All three measures reflect actual behavior, as opposed to other measured variables that are more reflective of academic potential, such as CAT score, and which, did not significantly correlate to level of delinquent behavior. It appears that it is how the child actually functions in school (academically and socially), rather than academic potential, or the presence of a specific learning disability that relate to level of delinquent behavior. Also, contrary to popular belief, rate of attendance was not systematically related to level of reported delinquent behavior among this sample. Number of disciplinary acts correlated most highly with frequency of delinquent behavior. Although it did not correlate significantly to classification level of variety and seriousness categorizations, number of disciplinary acts correlated to number of offenses in each of the four seriousness classifications and with each of the four classifications, except crimes against persons. It seems that those students who are in trouble in school frequently, are also frequently engaging in delinquent behavior outside of school. Troublesome behavior in school seems to be indicative of delinquent acts on

the outside of school, as was found by West & Farrington (1977). Loeber (1983) suggest in-school behavior may be one of the most important identification variables because of the level of correlation to delinquent behavior, and the practicality of utilizing school settings and school behavior for identification and prevention efforts. Trouble in school may be an early indicator of delinquent behavior, or may merely be one instance of a general pattern of antisocial behavior. Some clarity about this matter can be gained from the present study's finding of no significant correlation between number of disciplinary actions and age, while level of delinquent behavior and age correlated, suggesting school problems are evident earlier than delinquent behavior. These observed relationsips, in sum, suggest that those adolescents getting into trouble in school are also those beginning delinquency at younger ages, and apparently most likely to be chronically delinquent. Noteably, number of disciplinary actions was one of the few variables correlated with official status (having appeared in court, and haveing been adjudicated).

The school variables included in the present research suggest that actual functioning in school is likely to be an important variable for identifying delinquents. Trouble in school may be particularly useful for identifying subjects at-risk for chronic delinquency and adjudication. It appears that trouble in school may be an early indicator of later extensive delinquent behavior. However, there does not appear to be much support for considering school failure or academic deficiencies as primary influences in level of delinquency

exhibited. School functioning indicators have use, as one part of a multivariate model, for delinquency identification.

Family variables. Only one family structure variable (whether or not the parental marriage was intact) correlated significantly with any categorization of reported delinquent behavior, and it correlated only with frequency. These results suggest that family size and birth order have little utility for identifying at-risk adolescents, and that marital status has limited utility. $\underline{X}^2$ analysis suggest that it is parental divorce, rather than the absence of a one parent that is related to frequency of delinquent behavior, thus although of limited utility as discriminative variable, divorce may increase the risk of delinquent behavior. The level of correlation between parental divorce and delinquency, and the fact that it only correlated to frequency of delinquent behavior suggest that divorce is only one of several variables that must be considered in understanding the relationship of parental marital status and delinquency. The presence or absence of divorce may not be as useful an indicator as are direct measures of family systemic functioning and consideration of the context of the divorce, including the recency of the divorce (McCord et al., 1962), the age of the child when the divorced occurred (Robins & Hill, 1966), and the post divorce adjustment of the parents (Hetherington, et al., 1981).

Six of ten measures of family systemic functioning, the subscales from the Family Envrionment Scale, correlated significantly with level of reported delinquent behavior (Moral-Religious Emphasis, Intellectu-

Cultural Orientation, Conflict, Cohesion, Organization, and Independence). These results suggest that family systemic functioning relates to level of delinquent behavior, and that several aspects of family functioning are influential on level of delinquent behavior. The subscales that correlated significantly, emphasize three aspects of family systemic functioning, which are similar to the three dimensions Moos & Moos (1981) propose are measured by the FES. The first aspect of family systemic functioning related to delinquent behavior can be labeled the family's orientation (labeled by Moos & Moos, personal growth dimensions), which represents the basic values of the family and the family's conception of what a family is supposed to do for its members, including what activities are preferred and what lifstyle is valued. In the present study two orientation scales, the Moral-Religious Emphasis and the Intellectual-Cultural Orientation are negatively correlated to delinquent behavior. These two scales include items that tap the importance of religous activity, intellctual pursuits, and ethical values are to the family. Among the present sample delinquent behavior was low among subjects endorsing higher numbers of items on each of these two scales. Moos & Moos (1976) reported that out of six family orientations that could be identified by cluster scores on the FES subscales, the cluster labeled Moral-Religious Orientation, which was characterized by high scores on the Moral-Religious, Intellectual-Cultural Orientation, Organization, and Control subscales, and low score on the Conflict subscale, was unique, among the six clusters. None of the families classified as

best fitting the Moral-Religious cluster, were among a clinical portion of the study's sample, while all of the other clusters had some portion of their families drawn among the clinical population. According to Moos & Moos, families among this cluster show commonly accepted values and emphasize belief in a specific moral code. Among the present study, the same pattern of high and low scores on FES subscales as observed by Moos & Moos (1976), related to a low level or the absence of delinquent behavior, suggesting that family orientation toward religious and intellectual pursuits and some agreed upon basic values among all family members may be a good indicator of children not at-risk for delinquent behavior. Preventively, interventions that promote clarification of family values or make family values explicitly known to all members may help reduce or prevent delinquency.

The second identifiable aspect of family functioning that appears to be related to level of reported delinquent behaviors is the style of family interactions (labeled personal growth dimensions by Moos & Moos). In particular, whether family members tend to interact conflictually or cooperatively seems important. Family conflict correlated with level of delinquent behavior, and cohesion correlated negatively, suggesting that among families of delinquents there is more conflict with less of a commitment to and support available from other family members. Similar observations have been made by others. Simcha-Fagan reported that of the variables she studied, level of parent-child conflict was one of the best predictors of delinquent

behavior (r = .20). Hetherington et al. (1971) observed that one difference between families of normal and families of delinquent children, was that families of normal children were able to resolve conflicts. Haley (1980) characterized delinquent families as suffering from a lack of hierarchical organization, that prevents the parents from having the appropiate influence and power over family decisions. He suggest that when the role of family "manager" is abdicated one of the children must either act as the parent by default, or act out to bring the parent back into the "managerial" role. It appears that some delinquent behavior may be due, to high level of family conflict, with a concommitant lack of intra-familial desire or ability to resolve conflicts productively.

The third aspect of family functioning that seems related to level of delinquent behavior can be called interactional rules of the family (Moos & Moos refer to this as system maintenance). This apsect of family functioning is reflected by the Organization and Control subscale scores. In the present study low score on the Organization subscale correlated with higher levels of delinquent behavior. However, score on the Control subscale did not correlate significantly with level reported. This suggest that families of delinquents have less clarity about interactional rules than normal families, while level of control about what actual communications and interactions are allowed does not significantly differ. This finding is similar to Alexander & Parson's (1973) conclusion that it was not conflict per se, or dominance by one family member that characterized the poor intra-familial

communications of delinquents' families, but rather significant conflict without clear rules for communication. It seems that a combination of high conflict, with low organization may be characteristic of many delinquent families. Findings relating family systemic functioning to level of reported delinquent behavior may be particularly useful for identification, as they not only can help differentiate delinquents from nondelinquents, but can help formulate and direct preventive efforts (i.e. family therapy to help organize interactions or articulate important family values).

Socioeconomic status. The results found here indicate that socioeconomic status is not related to level of delinquent behavior for any of the categorizations. This is congruent with reports of other research (Elliot & Voss, 1974, Hindelang et al., 1981; Williams & Gold, 1972). However, contrary to what has been reported by others, and what was hypothesized in this study, official status did not correlate with socioeconomic status. Apparently, as was observed by Tittle et al. (1978) in their review of socioeconomic status, the previously reported relationships between socioeconomic status and delinquency have been diminishing in recent years. Whether this diminishing correlation is due to social change that has decreased the differences in level of delinquent behavior between socioeconomic groups, lesser inconsistencies in judicial processing of children from differing socioeconomic backgrounds, or more middle and upper class children are getting in legal trrouble, is not clear. But, the present

results suggest socioeconomic class is unlikely to be useful for identification research.

Summary of correlations of individual variables. The individual correlations of variables indicative of individual, school, and family functioning, age of onset of delinquent behavior, and of socioeconomic status with delinquent behavior suggest that several aspects of psychsocial functioning show potential for contributing to multivariate models to discriminate delinquent from nondelinquent subjects, and types of delinquents from each other. The most highly corelated variable was age of onset, demonstrating that the best predictor of future behavior is past behavior. Additionally, individual emotional well being, (emotional character) and family orientation and ability to resolve conflict appear to be particularly promising for delinquency identification, and for guiding preventive interventions. School behavior, seems to be useful for differentiating children at-risk for serious delinquency from those engaging in a more transient and less serious type of delinquent behavior. Also, schools provide an excellent setting for identification efforts. However, none of the variables studied here, correlates to level of delinquent behavior, by any of the three categorization methods used, at a level that suggest any one variable is sufficient alone or is the "critical" variable in the development of delinquent behavior. It may may be that some psychosocial conditions are critical for the development of delinquency or it may be that that it is merely the number of risk factors present that determines level of delinquent behavior.

Determining which explanation can best account for delinquency, or delineation of how each relates to different types of delinquency needs further exploration.

Multiple Regression Models

The multiple regression analyses indicated that the fifteen variable model was able to account for statistically significant and conceptually substantial proportions of the variance in frequency (46%), variety (45%) and seriousness (36%) of delinquent behavior reported. For each method of categorizing delinquent behavior, the multivariate model accounted for substantially more of the variance than any of the independent variables could alone. The order of entry of variables into the regression varied by categorization method, except for age of first delinquent behavior, which was entered first into all three models. The variation in order of entrance, and the differences in results from ANOVA and Scheffe analyses across the three categorizations suggests that the variables differed somewhat in their relative influence on frequency, variety, and seriousness of delinquent behavior.

Frequency. After age of onset of delinquent behavior, age of subject, and not having plans for more education were entered next in the stepwise regression model of frequency of delinquent behavior, suggesting that these variables are the most influential as to frequency of delinquent behavior reported. The variables entered last were score on the Intellectual-Cultural Orientation subscale, grade

point average, and estimated modal grade, suggesting that academic and intellectual interests are least influential in determining frequency of delinquent behavior. Family variables were entered midrange in the regression, suggesting they are moderately influential in this model. The apparent importance of age in the regression function suggest that frequency measures of delinquent behavior are reactive to the developmental delinquency described earlier, while also reflecting the high level activity of delinquents who began their delinquency early in adolescence.

The ANOVAs and $\underline{X}^2$ analyses suggest that only score on the Organization subscale is not individually related to level of frequency of delinquent behavior. Apparently, family organization is not related as much to sheer frequency of delinquency as it is to variety and seriousness of delinquent behavior. However, the independent relationship of all other variables with frequency of delinquent behavior was significant, suggesting that frequency depends on a large number and wide range of psychosocial variables.

Three patterns of differentiation of level means are discernable from the Sheffe analysis for frequency categorizations (Table 5-10, p. 160). The first pattern shown by one variable, disciplinary actions, distinguished the most frequent group from all the others but was unable to distinguish any of the other levels from each others, suggesting that very frequently delinquent subjects are distinguishable by frequent disciplinary problems in school. As mentioned previously, it appears that subjects in this group for the most part,

report early onset of delinquent behavior, are more likely to be adjudicated, and appear to be at-risk for chronic delinquency. A second pattern, discernable from the Scheffe analysis is evidenced by age of first offense, in which those reporting one or less delinquent acts are significantly different from all other levels, and those reporting 2-5 total acts are distinguishable from those subjects classified in the highest levels (50 or more acts reported). Again, the differentiation found suggests three distinguishable groups, the chronically active delinquents, a less active, and presumably transient delinquent group, and essentially non-delinquent subjects.

The third discernable pattern, and that shown by all the other variables with significant ANOVAs, is somewhat similar to that shown by age of onset of delinquent behavior, but less discriminating. These variables (age, score on Emotional Adjustment Scale, parent items from the Social Skills Self Efficacy Report, recorded grade point average, estimate of modal grade, and the Cohesion, Conflict, Intellectual-Cultural Interest, and Moral-Religious Emphasis subscales of the Family Environment Scale), could differentiate the groups reporting the least and most frequent groups, but could not distinguish finer gradations (i.e. subjects reporting 2-5 acts from those reporting 21-50). These results suggest that these variables may be useful in distinguishing subjects who commit a large number of delinquent acts, from those who commit little or or no delinquent behaviors, but not for finer differentiation. Compared to models for the other two categorizations of delinquent behavior, the more influential

variables for frequency seem to be related to individual emotional adjustment. The function developed here may best serve as a general measure of emotional functioning and extent of behavioral problems, rather than as a model specifically related to delinquency.

Variety of delinquent behavior. When compared to the order of entrance of variables on the regression model for frequency, several variables have different relative rankings in the model for variety of offenses. Most noteable are the increased importance of score on the Family Environment Scale subscale of Intellectual-Cultural Orientation and the student's estimate of their modal grade, and the decreased relative importance of number of disciplinary actions, and recorded grade point average. These results suggest that variety of delinquent behavior is less related to functional capability and behavioral difficulties than frequency, and is more related to a lack of intellectual interests, and perhaps to cognitive reflection about behavior.

Sheffe test analyses indicated that only age of first reported delinquent act could make finer diferentiation of levels beyond distinguishing subjects reporting behaviors in all four categories (the highest level) from those reporting no acts or only one type of delinquent behavior (the lowest levels). Age, Emotional Adjustment Scale score, parent items from the Social Skills Self Efficacy Report, estimated modal grade, and scores on the Cohesion, Conflict, Intellectual-Cultural Interest, Moral-Religious Emphasis and Organization subscales were limited to significantly differentiating the extreme levels of variety of delinquent behavior.

The results of the ANOVAS, X2, and Scheffe analyses of the independent variables and variety of delinquent behavior suggest that, like frequency the most accurate and specific correlate of variety of DSRM responses is age of first delinquent act, while other variables are more limited in their individual influence on variety of behavior. Intellectually oriented subjects may be more specific about the types of delinquent behaviors they engage in, and those committing a wide range of delinquent acts may be less intellectually oriented and less "thoughtful" about their behavior. Wolfgang et al. (1972) noted that the most seriously and most chronically delinquent subjects from their cohort also committed the widest range of delinquent behaviors. Variety of behavior may be related to a general antisocial lifestyle, commonly associated with the antisocial/psychopathic character (Offer et al., 1979). If indiscriminantly delinquent subjects tend to rely less on intellectual capabilities for determining or controlling behavior, subjects reporting a large variety of delinquent behaviors are less likely to be responsive to interventions that rely heavily on reflective or verbal/intellectual skills, such as traditional psychotherapy.

Seriousness of delinquent behavior. As in the other two regression equations, age of first delinquent behavior accounted for the more variance than any other single variable. Age, plans for more education, and score on the Conflict subscale were entered into the regression model for seriousness at a later point than for the models for frequency or variety. On the other hand, score on the Independence

Subscale of the Family Environment Scale and recorded grade point average are entered relatively earlier for the seriousness model, than for either the frequency or variety models. This early entrance, in light of the lack of a significant individual correlation between Indpendence and seriousness level, suggest that the high Independence score among seriously delinquent subjects reflects a lack of parental supervision and limit setting, rather than a healthy self-sufficiency. Poor parental supervision has been considered by several researchers to be an important influence in development of serious delinquency (McCord et al., 1962; Simcha-Fagan, 1979). The predominance of family functioning variables in the seriousness regression function supports continued attention to parental supervision and the parent-child relationship. Additionally, number of disciplinary actions and score on the Emotional Adjustment Scale were entered into the model in the same position as entered for the frequency model, but earlier than the model for variety of delinquent behavior, suggesting they are relatively influential on seriousness. In total, these results suggest that seriousness of delinquent behavior is relatively more dependent upon family systemic functioning than other variables, but overall intellectual and emotional well-being appear more important in this categorization than for frequency or variety. The later entrance of age into this regression model suggest that serious delinquents begin their delinquent activities early and continue them throughout adolescence, rather than beginning with status offenses and "graduating" to more serious offenses later on, as has been often presumed (Empey,

1978; West & Farrington, 1977). Even though seriousness correlated to age, age of subject was not a very influential variable in determining level of seriousness. This is considered further evidence that there are probably two groups of delinquents, as described previously, the "chronic" delinquents, and the "developmental" delinquents.

ANOVAs and Scheffe analyses indicated that seven variables, age, score on Emotional Adjustment Scale, age of first reported delinquent behavior, and scores on the Cohesion, Conflict, Intellectual-Cultural Orientation, and Moral-Religious Emphasis subscales of the Family Environment Scale were independently related to level of seriousness and able to significantly differentiate level of seriousness of self-reported delinquent behavior to some extent. For all of these variables, only the higher and lower had significantly different means. Noteably, neither of the school variables most specifically reflective of school functioning (grade point average and number of disciplinary actions) differentiated levels of seriousness, suggesting school functioning may be less reflective of seriousness of delinquent behavior than are other categorizations. In total, the ANOVA and Sheffe results suggest no single variable stands out as the a primary correlate of seriouness of delinquent behavior, but rather several variables in combination can distinguish the subjects not reporting any offenses or reporting only status offenses from those reporting serious felonies. The family systemic functioning variables seem to be somewhat more influential for differentiating seriousness than other types of variables, suggesting that seriousness of delinquent

behavior may be more a dependent on family functioning than the other categorizations of delinquent behavior.

Discriminant Analyses

All three stepwise discriminant function were significant, suggesting that among older adolescents, more frequent, less discriminating, and more serious delinquents can be differentiated from less delinquent counterparts by a combination of the variables used here. For all three functions, the variables were entered in the same general order as they were entered for the stepwise multiple regresssions. However, with the exclusion of subject age in the discriminant analyses, the variety and frequency functions became quite similar as to order of entrance of variables, excepting a greater relative importance of intellectual and academic interest in the variety function. Apparently, among adolescents of the same age range, relative variety and frequency are quite similar. The order of entrance of variables in the function was a bit different for seriousness than for the other two categorizations, as family systemic variables, were more prominent in the seriousness discriminant function. In particular, variables thought to reflect the tenor of the parent-child relationship were most influential. This result, like the multiple regression function, suggest family interactions style and the quality of the parent-child relationship are more influential on seriousness of delinquent behavior than on frequency or variety.

Although the models could significantly discriminate high and low level delinquents within each categorization model, the accuracy of

classification of subjects was limited. All three discriminant functions classified low level delinquent subjects fairly accurately, across both age groups, but all three had a marked tendency to underidentify subjects in the high level classifications (type I errors). This bias toward underidentification of higher level subjects was evident for both age groups. In fact, among younger subjects, more subjects predicted by the cutting scores to be in the high level group were actually classified by the function in the low level group than were classified in the high level group. This trend occurred across all three categorizations. The discriminant functions were better able to specify which subjects were not at-risk for delinquent behavior, than specifying which subjects were at-risk. The present data suggest a small number of delinquent behaviors are commmon among younger adolescents, and many of these are minor offenses that are technically illegal. However, there is evidence here that a portion of younger adolescents (the "chronic" delinquents) are already engaged in serious and indiscriminant delinquent behavior by early adolescence. Contrary to what was hypothesized, it is not younger adolescents engaged in minor delinquent behaviors that are most similar on the independent variables to older adolescents reporting very high levels of delinquent behavior, but rather, younger delinquent engaged in serious, frequent, and indiscriminant delinquent behavior who are like the older high level delinquents. These subjects were apparently accurately classified by the discriminant functions, whereas most of the younger adolescents grouped by the cutting scores in the high

group, were more like the lower level older adolescents. The limited discriminability of the functions developed here suggest two directions for future research attempting to develop discriminative models. The first is to use higher cutting scores, for classifying younger adolescents, suggesting that higher rates of delinquent behavior among younger adolescents be defined as "low" level delinquency. However, if this methodological change is applied to actual identification of adolescents, it could imply a greater tolerance of delinquent behavior as social policy and therefore, may conflict with policy that considers any delinquent behavior in early adolescence significant. The second course of action is to reconsider the presumption that delinquent behavior begins with a few minor transgressions that "develop" into serious delinquency, and consider a significant portion of early delinquency to be an example of an ongoing pattern of behavioral aggressiveness, which is apparently dependent upon an interaction of temperament with family systemic functioning and social stressors (Olweus, 1979; Loeber, 1982, 1983; Wahler, 1976). Patterson (1982) and Loeber (1982) have suggested such an approach is most congruent with the accumulated research on the outcome of childhood aggressiveness and the antecedents to delinquency. They report that relative level of aggressiveness, compared to peers, remains fairly constant over time, and that level of aggressiveness can be regarded as a trait. The present results suggest one segment of the of the delinquent subjects fit that description, exhibiting "characteristic" aggressiveness.

In addition to the conservative cutting scores used, the present model's ability to accurately classify high level delinquents may also be limited by many of the measures used. As the primary interest of this research was to consider the applicability of multivariate models, including a range of variables, many illustrative rather than specific and complex measures were used to allow sampling of a wide range of types of variables. As has been mentioned frequently, the correlations found suggest a need for more specific and in-depth examination of the types of variables found to relate to delinquency. Thus, there may be considerable overlap of the groups on present measures, whereas more sensitive mesures might clearly distinguish high and low level groups. The results of the discriminant analyses do no support classification based directly on all measures used in this research, but do suggest consideration of the variables identified here, with more specific and sensitive measures, as a model for future research and policy formation.

Method of Measurement

The question of how to measure delinquent behavior was identified as a methodological and policy issue. The two analyses directly addressing this concern were the correlation between official status and reported delinquent behavior, and comparison of the interrelationships of the three categorizations of delinquent behavior.

Score on the official contact scale correlated significantly with level of DSRM responses, across all three categorizations of DSRM responses, suggesting that police contacts correlated moderately with

level of delinquent behavior. The relatively uniform level of correlations between score on official contact scale and all three categorizations of DSRM responses, suggests that police contact is not any more a function of seriousness than it is number of delinquent behaviors. However, adjudication status was significantly related to variety of offenses. Additionally, correlations with the other two categorizations approach statistical significance, suggesting a small relationship between level of delinquent behavior and official status. This level of relationship is consistent with reports of others (Williams & Gold, 1972). Unfortunately though, correlations at this level leave between 96 and 99 percent of the variance in official legal status unxeplained by level of delinquent behavior, suggesting several other variables are influencing adjudication procedures. Presumably, much of this variance is due to the fact that someone may be caught and prosecuted for their first or fiftieth offense, and their legal status is the same (adjudicated or not) whether the offense is truancy or murder. Thus, a less than perfect correlation between official status and level of reported delinquent behavior is expected. However, the present findings suggest that official status is a very unreliable measure of extent of delinquent behavior. This is particularly important in view of the strong advocation by some policy boards (Flicker, 1977), for abandoning use of identification based on psychological research, and concommitant increased reliance on legal procedures to identify delinquents. Clearly, a purely legalistic approach is not more accurate or efficient than identification

models based on psychological research. In particular, the number of false positives and false negatives may be much higher relying on legal procedures, than by relying on psychosocial variables. As the basic premise of the legalistic approach, is that it better serves the rights and needs of children than the psychological/treatment approach, the low correlations suggest this premise and policy based on this premise may not be sound.

As to the other measurement issue, the correlational analyses of the interrelationship of the three methods of categorizing reported delinquent behavior, show that all are highly intercorrelated. This is to be expected as the categorization methods are all drawn from the same data, and differ only in emphasis on different aspects of delinquent behavior. What is noteable, is that despite the high level of intercorrelation, between 36 and 48 percent of the variance in any one of categorization methods is not explained by other methods, suggesting that frequency, variety, and seriousness of delinquent behavior are not interchangeable classification methods. These results suggest that attention to the categorization method used in classifying self-reported delinquent behavior is important, as it can effect the level of correlations found, the extent to which variance in level of delinquent behavior can be explained, and which independent variables will appear most important.

As can be observed by the results obtained here and discussed above, each categorization method is differentially reactive to individual, school, and family variables. Therefore, the importance of

specific variables in identification efforts depends on how delinquent behavior is categorized. Summarily, the present study found that frequency was comparatively more reactive to emotional functioning, and seemed to reflect general misbehavior. Thus, frequency may have limited ability to differentiate delinquents from adolescents with behavior problems, and to scale acts by their legal seriousness and relative impact on society. The variety categorization level was comparatively reactive to level of intellectual interest, and this has been interpeted as indicating a generally unreflective, antisocial lifestyle among subjects reporting a a wide variety of offenses. Therefore, efforts utilizing this method are likely to differentiate subjects who are equally likely to commit one type of social transgression as another. Variety categorization of self-reported delinquent behavior may be most useful for identifying "antisocial characters." Also, those reporting a variety of offense tended to report more serious offenses, suggesting variety may be an estimate of seriousness, and so may not be as distinctively useful as for general delinquency identification. Seriousness categorizations seems to be most reactive to family systemic functioning, in particular, the family's orientation and the tenor of the parent-child relationships. Researchers wanting to identify adolescents at-risk for committing the most serious acts, may want to give special consideration to family systemic functioning. Seriousness seems to be the categorization method most able to distinguish the segement of the population who

begin their delinquent behavior early and are most at-risk for continued serious criminality (Wolfgang et al., 1972).

Each method has its merits and its limitations, and the present research highlights the need for researchers to clarify apriori, what aspect of delinquent behavior is the target of their research, and to use the appropiate method. In application, to actual identification, frequency may be useful for primary and secondary prevention efforts, to identify general trends in prevalence and types of delinquent and behavioral problems in a given population, while seriousness may be most useful for identifying those children at-risk for serious and chronic delinquency, and likely to need more intensive intervention.

Summary

The present results of the relationships of psychosocial variables to level of delinquent behavior suggest that the myriad of study's that have, in the past, have studied the correlation of different variables to delinquency, were acting in a manner similar to the fabled blind men describing the elephant, in which each man described the animal by the feel of the portion they were touching; the man touching the trunk indentified the elephant as a snake, the man touching the legs said it was a large tree, and so on, with each man reporting his "research" observations. Although, each blind man accurately perceived his portion of the elephant, and drew logical conclusions from what he perceived, each misperceived what he was actually touching. Similarly, researchers have studied some segment of delinquency, and drawn logical conclusions from their observations,

but like the blindmen were limited by their methodology and failure to consider the multiple aspects of the "animal" they were trying to identify. Multivariate approaches, as used in the present research, have demonstrated that we can begin to understand this "animal" of delinquency, but that no single variable is sufficient to distinguish delinquents from their nondelinquent counterparts. What remains to be explored is what variables, in what combination are best able to identify the most delinquents.

The results of this study have shown that multivariate models of delinquency, utilizing individual, school, and family variables can be useful for delinquency identification. The multivariate models were able to account for a larger portion of the variance than any single variable, and for more than has been reported by most other studies, excepting one other multivariate study of delinquent behavior (Simcha-Fagan, 1979). It appears that such a model is also preferable to simply relying on legal proceses for identification of delinquents. Although the present model is considered basic, the types of variables identified appear most likely to provide the power and accuracy needed to allow for reliance on multivariate models for identification and directing preventive efforts. In particular, individual character, age of onset of delinquent behavior, and family systemic functioning seem to hold the most promise.

The trend of the correlations found and the order of entrance of variables into the regression and discriminant functions, suggest that there are probably three groups of subjects to consider in delinquency

identification and preventive efforts; a group of chronic delinquents who begin delinquency early and engage in frequent, serious, and indiscriminant illegal activity, a group of delinquents who generally begin delinquent behavior at midadolescence and appear to be engaging in a developmental social experimentation, and a group of subjects who do not exhibit any delinquent behavior, and are noteable for their lack of risk for delinquent behavior. Of the three groups, the latter seems most easily differentiated, with family orientation one primary indicator. It appears that families with an agreed upon, articulated moral system are not likely to produce delinquent children. Study of subjects from such families could further understanding of ways to prevent delinquency and how to design interventions.

Another finding of this study was that methods of categorizing delinquent behavior (freqeuncy, variety, and seriousness) are comparatively more dependent on different apsects of psychosocial functioning. Careful and specific definition of how delinquency is being measured and categorized are necessary to facilitate across study comparisons, and to icrease the reliability and credibility of psychological research on delinquency.

A third finding of this study is that delinquent behavior is quite prevalent among adolescents, and that its absence may be more noteable than its presence. Related to this result is the observation that delinquents are a heterogenous population across most psychosocial variables. The expectation of finding a characteristic that differentiates delinquents from "normals" may be futile, as some

delinquent behavior (often legally serious) is normal among adolescents. Additionally, more progress may be made by examining how variable interact to produce different types and degrees of delinquent behavior, than trying to develop models to differentiate delinquents and nondelinquents. This last finding has methodological (determination of cutting scores) and policy issues (what level of delinquent behavior is to be tolerated, how preventable is the "normal" delinquency, how should the almost universal delinquency be viewed). Following the discussion of the limitations of the study, the implications of the results found will be addressed.

Limitations of the Study

In any study there are limitations that effect results and the study's use. The present study was conceived of as a basic examination of the relationship of a wide range of psychosocial variables to self-reported delinquent behavior, with emphasis on the efficacy of multivariate models based on individually correlated variables, for identification of delinquent and delinquent prone adolescents. Several characteristics of the design limit the generalizability of the results. Three primary types of limitations can be identified; those related to the sample characteristics, those related to the measures used, and the use of one time sampling.

Sample Used

In order to keep the complexity of administration of the

research to a controllable level, maintain adequate cell size, and keep analysis of the results at a weildable level, the study focused exclusively on males. Researchers have found considerable interaction between gender and other variables related to delinquency (cf. Empey, 1978), and therefore, the present results may not apply to female adolescents. However, in a similar study, which included females, Simcha-Fagan (1979), found few gender differences among variables comparable to those included in the present study, excepting the variables "mother rejecting" and school absenteeism, which related to delinquency among females, but not among males. Continued study is needed to determine what variables related to delinquency interact with gender, and which are equally important for males and females.

Similarly, the race of the subjects here was almost exclusively Caucasian, and so the results have not been formulated, with influence of racial and ethnic background as a covariate. Therefore, the results found here may have limited applicability to other ethnic and racial groups. Ideally, a wider range of ethnic and racial groups would have been included, but the schools from which subjects were drawn, were almost exclusively Caucasian. Cross validation research to determine the applicability of the present findings to more heterogenous groups is needed.

As all subjects used were from a suburban-rural area, surrounding a southeastern city, the generalizability to other geographic areas and other types of communities may be limited. For example, Ferdinand (1964) reported that among rural delinquents father absence due to

death was more highly correlated with thievery, while among urban subjects, father absence due to divorce was the correlated condition. Study of the interaction of community size and geographic location with the variables studied here is needed.

The fourth limitation of the study related to the subjects, was due to the reliance on voluntary subjects. The subjects, by virtue of their cooperativeness, may not be representative of the general populations. In particular, it may be that those subjects least likely to volunteer are those involved in the most delinquent behavior. However, it is difficult to ascertain exactly the extent of this effect, except to note that the present sample seemed representative by virtue of the range of delinquent behavior reported, the range and means for grade average and CAT score (at about the national means), and the of soioeconomic status distribution (across all five levels).

Types of Measures Used

As the objective of the present study was to sample a wide range of psychosocial variables and to investigate what types of variables might relate to level of self-reported delinquent behavior, many measures were selected with their brevity and ease of completion as one consideration. Therefore, except for the court and school records, the other measures were self-report, which may have limited the validity of the results due to method error (Campbell & Fiske, 1959). Inclusion of behavioral measures and reports of others would have

bolstered the efficacy of the present findings, and clarified the validity of the findings. Future research should utilize multimethod measurements to limit method error.

Another limitation of this study was the the level of sensitivity of many of the measures. Although standardized measures were utilized when available, several measures were illustrative and exploratory (e.g. number of friends you can trust) and were not meant to act as definitive measures of the variable addressed. More extensive measurement of most of the variables tested here is needed to accurately determine their utility in delinquency research.

One Time Sampling

The study based its results on single sample of subjects, due mostly to time limitations. Therefore, the reliability of the results can be questioned. Use of standardized and reliable measures were employed to limit this problem, but a repeated measures design, preferably longitudinal studies, would provide less questionable measurement. This may be particularly important when identifying variables that are predictive of delinquency, as single sampling cannot indicate the statibility of the correlation between variables and delinquency. over time.

Implications of the Study

In addition to the implications alluded to at various points in the discussion, the present study's focus and the results obtained have some implications for further research and for social policy.

The first group of implications concern methodology of delinquency identification research. The present study utilized normative sampling, standardized measures (when possible), a self-report measure of delinquent behavior, and concurrent measurement of variables, and has demonstrated the preferability of each of these methodological approach to their counterparts, which have prevailed in delinquency identification research (e.g. studying single variables, used of matched groups, use of institutionalized delinquents, reliance on offical status to classify subjects as to delinquency). The results found here suggest that researchers interested in identification of subjects based on delinquent behavior should utilize the methods employed here to facilitate the validity and generalizability of their results.

Another methodological consideration addressed by this study, with implications for future research is the issue of how to measure and categorize delinquents for identification and prevention efforts. The use of frequency, variety, and seriousness categorizations have shown that what aspect of delinquent behavior is emphasized for categorizing and scaling delinquency can effect the variance accounted for and which variables will be relatively most influential. This suggest future researchers may need to pay explicit attention to how they are measuring and categorizing delinquency. Apparently, differentiation of delinquent behavior from legal status has become common, and a standardized, valid measure is available (Hindelang et al., 1981). Use of such a measure can aid progress by facilitating communication

between researchers, and easing comparisons across studies. However, the present study demonstrates the need for further advances toward standardizing classification of delinquent ehaviors.

A second type of implication from this study is related to the results of the variables correlated to delinquent behavior and the forms taken by the multivariate functions. First, from the present study, it is apparent that dichotomously classifying subjects as delinquent and nondelinquent or at-risk and not at-risk have little heuristic or practical value for research, and little applicability to actual identification efforts. The present results suggest that there are at least three groups of subject that should be differentiated in research on delinquency identification. The first group is characterized by early onset of delinquent behavior, and appear to be most at-risk for chronic and serious delinquency and criminality. The second group, engage in delinquent behaviors to a lesser degree than the first group, tend to have a later onset of delinquent behavior, and appear to be engaged in a developmental social expereimentation, rather than a from of prodromal criminality. The third group, apparently a minority of adolescents, is noteable because of the absence of delinquent behavior. Further gradations and division by other charcteristics may also be useful and necessary to adequately account for the "types" of delinquents. At least, the present study suggest it would be more productive and accurate to consider delinquency a matter of degree, rather than a "either-or" state.

Another implication for research from the correlations found and the multivariate models developed is that multiple variables should be considered in studies of the correlates of, causes of, predictors of, inlfuences on, and bases for delinquent behavior. Apparently, several variables influence degree of delinquency, while no single variable is a necessary or sufficient condition for all delinquent behavior. Instead, what variables interact to influence degree and type of delinquent behavior need study. The results of this study suggest a combination of individual character or temperament, school functioning, and family functioning deserve particular attention. Also, influence of peer relations and future expectations need further exploration. For example, the interaction of peer relations and family functioning in their influence on delinquency needs further clarification. Also, expectations for the future may provide an efficient summative measure of risk for chronic delinquent behavior and therefore, may be an effective means for distinguishing types of delinquents. Continued research in all of these areas is warranted.

The finding that multiple variables are influential on extent of delinquency and that there are several "types" of delinquent behavior patterns raises a major question of how to explain degree of delinquent behavior. Two approaches that appear to show the most promise are to consider level of delinquency to be a result of the interaction between temperament and family systemic functioning, as has been suggested by Olweus (1979), or to consider delinquent behavior to be a function of the number of risk factors present, rather than due to

specfic conditions, as has been applied by Bry et al. (1982) to explaind drug use. It is likely that both explanations can account for some delinquent behavior, and that additional explanations are needed to account for all delinquent behavior. Research to determine the comparative efficacy of these explanations is needed. It may be that a general explanation of delinquent behavior can be developed by considering a matrix of influence of individual temperament by family systemic functioning by extra-familial stressors as the basis for delinquent behavior.

In addition to these implications for further research, the present study can have implications for policy development in the field of delinquency and juvenile justice. The present results, like other recent studies, suggest that delinquent behavior is so prevalent in our society as to be a normal rather than an aberrant condition. The majority of adolescents are at-risk for criminal prosecution and enormous social and economic costs are being incurred by our society due to this problem. Two types of implications derive from this finding.

The first implication drawn from this observartion, is that although unable to account for the majority of variance in delinquent behaviorat present, research on psychosocial variables seems to provide the most likely path toward sound and utilitarian identification models, and has the added advantage of suggesting areas for effective preventive strategies concurrently. Such an approach is advantageous to simply relying on legal processing for identification.

The latter appears to be unreliable and does not provide direction for treatment and preventive efforts. Sole reliance on legal procedures is likely to merely replicate the problems of the adult criminal justice system. Although it is inevitable that some differences between lawyers and social scientists exist about the relative weight that should be given to causes of and influences on behavior patterns vsersus legal considerations in the field of juvenile justice, the present research presents one piece of evidence that psychological research can contribute significantly to the juvenile justice system and facilitate progress toward the primary goal of that system, which is to decrease and prevent crime. It seems that it would be in the best interest of the children subject to the regulations set and social processes mediated by legal policy boards to continue use of research in decision making.

The second type of implication for policy emerges from the observed prevalence of delinquent behavior, much of it legally serious with significant negative effect on adolescents and others. This suggests that all delinquent behavior cannot be attributed to aberrant psychological or familial functioning, but rather, is only understandable in terms of a general social condition. This implies a need for those influencing policy to reconsider what we mean by "delinquency". To some extent, such reconsideration is implied in the freqeunt proposals to remove status offenses from inclusion in juvenile offenses. A similar, but more radical step, would be to remove drug and alchohol and "victimless" offenses from criminal catetgories, and

instead consider them matters of health and quality of life, to be addressed by education and other primary prevention efforts, rather than legal prosecution. Such legal changes represent radical steps, and it is difficult to ascertain beforehand the social and legal implications of such changes, so further study is needed. Additionally, such a change would not answer why it is that such behaviors occur or are so prevalent, nor indicate how to prevent or limit their negative impact on adolescents and our society.

Related to these legal reconsiderations is a need to reexamine what our culture expects of adolescents as citizens and of adolescence as a developmental stage. Apparently, there is a need for education to increase the understanding of the important social contract implicit in the laws of society. However, there is also a need to reconsider how well our society integrates the needs and interests of adolescents into our social organization. At present, it seems that for many adolescents, integration into social roles and adulthood are accomplished with excessive consternation, and harm to themselves and other from their delinquent behavior. The most effective preventive effort may be to consider adolescents' needs and interests as worthy of full consideration in developing social policy.

In summary, the present study provides a step toward increased ability to identify delinquents and those at-risk for delinquency, and provides some directions for future research in the area. Perhaps, in combination with other studies, research can provide an avenue for addressing this major social problem.

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APPENDIXES

APPENDIX A

SURVEY FORMS

Appendix A-1

Psychological Screening Inventory

Emotional Adjustment Scale[1]

Below is a list of situations or problems that people sometimes have. Please read each one carefully. After you have done so, please check "True" if this is like you or "False" if this is not like you. Do these in order and remember to answer every question.

	True	False
1. At times I lose all my drive	_____	_____
2. I do not worry about going insane	_____	_____
3. People usually understand me	_____	_____
4. I think carrefully about all my actions	_____	_____
5. I don't get sick very often	_____	_____
6. I often find it hard to concentrate	_____	_____
7. I take all my responsibilities seriously	_____	_____
8. I am tempted to sleep too much	_____	_____
9. My health is no problem for me	_____	_____
10. Sometimes I am no good for anything at all	_____	_____
11. Warm relationships are difficult for me	_____	_____
12. I am often tired during the day	_____	_____
13. I am easily distracted from a task	_____	_____
14. I rarely wake up tired	_____	_____
15. Much of my life is uninteresting	_____	_____
16. I have little confidence in myself	_____	_____

	True	False
17. I feel isolated from other people	_____	_____
18. I have a lot of energy	_____	_____
19. I never act without thinking	_____	_____
20. The world has always seemed pretty real to me	_____	_____
21. I never had a strange mental attack	_____	_____
22. I always do my work thoroughly	_____	_____
23. I would make a good leader	_____	_____
24. I sometimes feel I am in a world alone	_____	_____
25. When I get nervous my hands trembel	_____	_____
26. I rarely stumbelor trip when I walk	_____	_____
27. I think carefully about most things I do	_____	_____
28. I rarely feel anxious in my stomach	_____	_____
29. People think I am more immature than I am	_____	_____
30. At times I feel worn out for no special reason	_____	_____
31. I rarely or never get headaches	_____	_____
32. People often embarass me	_____	_____
33. Occasionally I feel dizzy or light-headed	_____	_____
34. I feel that people keep secrets from me	_____	_____
35. My strength often seems to drain away from me	_____	_____

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[1]Johnson, J. H., & Overall, J. E. Factor analysis of the Psychological Screening Inventory. Journal of Consulting and Clinical Psychology, 1973, 41, 57-60.

[2]Items 1, 6, 8, 10-13, 15-17, 24,25, 29, 30, and 32-35 are the "false" direction.

Appendix A-2

Social Skills Self Efficacy Report (SSER)

Directions: For each situation answer;

Could do Yes = you believe you could make the response

No = you believe you could not make the response
(check Yes or No for each situation)

How Sure How sure your are in your belief if you say Yes.
Put in the number from 10 to 100 indicated below:

10	20	30	40	50	60	70	80	90	100
not at all sure that you could do the response			somewhat sure you could do it					absolutely sure you could do it	

Situations

	Could Do	How Sure
1. You are in the lunchroom and a friend sits down next to you and starts to eat his sandwhich. This friend borrowed some of your best records two weeks ago and hasn't returned them yet. He's borrowed some things before too, and has sometimes returned them damaged. Your remind him about the records and he tells you tha a couple of them are scratched badly. You say, "Everytime you borrow something of mine it comes back late and damaged. I'm not lending you things for awhile."	_____Yes ____No	_____
2. You're in Math class waiting for your teacher to hand back your report card with your grade for this marking period. You figure you've done pretty well this semester and will probably get an A or B. The bell rings as you get your report card passed back and you realize the teacher has given you a D. The teacher's putting his papers away and getting ready to leave for the next class. You approach the teacher and say. "Could I speak with you for a few minutes? I really don't understand why I got the D this semester. Could we go over my papers so I'll understand why I got that grade?	____Yes ____No	_____

	Could do	How Sure
3. You're at the dinner table. Your parents are asking you what you've been doing lately with your friends. You metnion that you'll probably be bumming around with Charlie this weekend. Your mother tells you that Charlie is a bad influence, and suggests that you hang around with John. You say, "I know how you feel mom, but I think I'm old enough to choose my own friends. If I make a mistake then I'll learn from it, but let me do the choosing, OK?"	____Yes ____No	_____
4. Your girlfriend walks up to you in the hallway and angrily accuses you of being asked out by another person you just said "hi" to. You say, "She did not ask me out. She is one of my friends. Everyone knows I go out with you, and all of them are just friends. I enjoy talking with them, and I'm going to keep doing it."	____Yes ____No	_____
5. Your're trying to take notes in class, but the teacher is going so fast you can't keep up. You raise your hand and say, "Could you stop a minute and go back to your last topic? I'm really having trouble trying trying to follow. Could you you slow down a bit?"	____Yes ____No	_____
6. As you're getting dressed to go to the teen center tonight, your mother comes into your room and tells you that you can't go there because it's a hang-out for "druggies". You say, "I know that you don't approve of the center, but you've never been there to see what it's really like. Do you think you could visit there with me before you deide you hate it? You might be surprised you know."	____Yes ____No	_____
7. You're in a closed car with other people. One person is smoking and blowing a lot of smoke in your direction. It really bothers you and you say, "Would you mind putting out that cigarette or blowing the smoke so it doesn't come over here. Thank you."	____Yes ____No	_____
8. You're at a football game where you have a reserved seat. As you walk down the aisle of bleachers, you see someone sitting in the seat assigned to you. You say, "I think you are in my seat. My ticket says I should be sitting here. Could you please check your ticket?"	____Yes ____No	_____

Appendix A-3

General Questionare

_____No.

_____age _____grade

Your answers to the following questions will help us with our research. Please answer as best you can.

1. I have _____ brothers.

2. I have _____ sisters

3. I am the _____ oldest child in my family (what is your birth order place)

4. Please check to show your parents' marital status,

_____ married and living together _____ separated

_____ divorced _____ remarried to other people

_____ father deceased _____ don't live with your parents

_____ mother deceased _____ Other (explain)_____

5. Please note your father's job and your mother's job by checking the descriptions below and putting an F next to the the one that best describes what your father does, and an M next to the one that best describes what your mother does.

___Laborer	___Store Clerk/Salesman	___Teacher
___Housecleaning	___Business Executive	___Professor
___Machine Operator	___Salesman	___Minister
___Truck Driver	___Office Worker	___Store/Business Owner
___Craftsman	___Mechanic	___Mailman
___Carpenter	___Entertainer	___Housewife
___Foreman	___Doctor	___Lawyer
___Inspector	___Professional	___Unemployed
___Other Service	___Other (write in)_____	

6. Please note your parent's level of education by placing an F next to the statement that best describes his education, and an M; next to that which best decribes your mother's.

___6th grade or less ___Some college or technical training

___Didn't finish high school ___Graduated college

___Finshed high school only ___Went to graduate school

___Other (Explain)_____

7. Please complete the following statements about yourself;

The grade I get most often (circle one) A B C D F

I have repeated a grade (check one) ____Yes ____No

On the average, I miss (check one) days a month from school

___0-2 ___3-5 ___5-8 ___9-11 ___more than 12

I consider my attendance to (check one)

___Excellent ___Above Average ___Average ___Below Average ___Poor

For me, reading has always been (check one)

____Easy and Interesting

____Easy but Boring

____Hard but Interesting

____Hard and Boring

After high school I plan to (check one)

___Go to college ___Join the service

___Go to a trade school ___I don't know wht I'll do

___Get a job right away ___Travel

___Other

I have _____friends that I trust enough to tell my true feelings

_____

Appendix A-4

Moos Family Environment Scale (FES)[1]

	Scoring Direction
Cohesion Subscale	
1. Family members really help and support one another.	True
2. We often seem to be killing time at home.	False
3. We put a lot of energy into what we do at home.	True
4. There is a feeling of togetherness in our family.	True
5. We rarely volunteer when something has to be done in our family.	False
6. Family members really back each other up.	True
7. There is little group spirit in our family.	False
8. We really get along well with each other.	True
9. There is plenty of time and attention for everyone in our family.	True
Expression Subscale	
1. Family members often keep their feelings to themselves.	False
2. We say anything we want to around home.	True
3. It's hard to "blow off steam" at home without upsetting somebody.	False
4. We tell each other about our personal problems.	True
5. If we feel like doing something on the spur of the moment we often just pick up and go.	True
6. Someone usually gets upset if you complain in our family.	False
7. Money and paying bills is openly talked about in our family.	True
8. We are usually careful about what we say to each other.	False
9. There lots of spontaneous discussions in my family.	False

Conflict Subscale

1. We fight a lot in our family.	True
2. Family members rarely become openly angry.	False
3. Family members sometimes get so angry they throw things.	True
4. Family members hardly ever lose their tempers.	False
5. Family members often criticize each other.	True
6. Family members sometimes hit each other.	True
7. If there is a disagreement in our family, we try hard to smooth things over and keep peace.	False
8. Family members often try to one-up or out-do each other.	True
9. In our family, we believe you don't ever get anywhere by raising your voice.	False

Independence Subscale

1. We don't do things on our own very often in our family.	False
2. In our family, we are strongly encouraged to be independent.	True
3. We think things out for ourselves in our family.	True
4. We come and go as we want to in our family.	True
5. There is littel privacy in our family.	False
6. Family members almost always rely on themselves when a problem comes up.	True
7. Family members strongly encourage each other to stand for their rights.	True
8. Its hard to be by yourself without hurting someone's feelings in our household.	False
9. We are not really encourged to speak up for ourselved in our family.	False

Achievement Orientation Subscale

1. We feel that it is important to be the best at whatever we do.	True
2. Getting ahead in life is very important in our family.	True
3. How much money a person makes is not very important to us.	False
4. We believe in competition and "may the best man win".	True
5. We always strive to do things just a little better the next time.	True
6. Family members rarely worry about job promotions, school grades, etc.	False
7. In our family, we don't try that hard to succeed.	False
8. "Work before play" is the rule in our family.	True
9. Family members are often compared with other as to how well they are doing at work or school.	True

Intellectual-Cultural Orientation Subscale

1. We often talk about political and social problems	True
2. We rarely go to lectures, plays, or concerts.	False
3. Learning about new and different things is very important to us	True
4. We are not that interested in cultural activities.	False
5. We rarely have intellectual discussions.	False
6. Someone in our family plays a musical instrument.	True
7. Family members often go to the library.	True
8. Watching T.V. is more important than reading in our family.	False
9. Family members really like music, art, and literature.	True

Active-Recreation Orientation Subscale

1. Friends often come over for dinner or to visit.	True
2. Nobody in our family is active in sport, Little League, bowling etc.	False
3. We spend most weekends and evenings at home.	False
4. We often go to movies, sports events, camping, etc.	True
5. Everyone in our family has a hobby or two.	True
6. Family members are not very involved in recreational activities outside work or school.	False
7. Family members sometimes attend courses or take lessons for some hobby or interest (outside school).	True
8. Family members go out a lot.	True
9. Our main from of entertainment is watching T.V. or listening to the radio.	False

Moral-Religious Emphasis Subscale

1. We don't say prayers in our family.	False
2. Family members attend church, synagogue, or Sunday school fairly often.	True
3. We often talk about the religious meaning of Christmas, Passover, and other holidays.	True
4. We don't believe in heaven or hell.	False
5. Family members have strict ideas about what is right and what is wrong.	True
6. We believe there are some things you just have to take on faith.	True
7. In our family, each person has different ideas about what is right and wrong.	False
8. The Bible is a very important book in our house.	True
9. Family members believe that if you sin you will be punished.	True

Organization Subscale

1. Activities in our family are pretty carefully planned.	True
2. We are generally very neat and orderly.	True
3. It's often hard to find things when you need then in our household.	False
4. Being on time is very important in our family.	True
5. People change their minds often in our family.	False
6. Family members make sure their rooms are neat.	True
7. Each person's duties are clearly defined in our family.	True
8. Money is not handled very carefully in our family.	False
9. Dishes are usually done immediately after eating.	True

Control Subscale

1. Family members are rarely ordered around.	False
2. There are few rules to follow in our family.	False
3. There is one family member who makes most of the decisions.	True
4. There are set ways of doing things at home.	True
5. There is a strong emphasis on following rules in our family.	True
6. Everyone has an equal say in family decisions.	False
7. We can do whatever we want to in our family.	False
8. Rules are pretty inflexible in our household.	True
9. You can't get away with much in our family.	True

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[1]Moos, R. J., & Moos, B. S. Family Environment Scale manual. Consulting Psychologist Press, 1981.

Appendix A-5

Delinquency Self Report Measure (DSRM)[1]

_____No.

Everyone breaks some rules and regulations in their life. Listed below are a number of rules that are more or less frequently broken. Next to each rule or act is a blank space. Write the number of times that you have done the act or broke the rule, in the last year. If you haven't done the act or broken the rule leave the space empty.

Write the number of times in the last year you have....

	Variety[2]	Seriousness[3]
1. been sent out of the classroom for disrupting	St	St
2. stayed out of school when your parents thought you were there	St	St
3. sold something you had stolen yourself	Pr	MF
4. broke into a house, store, school, or other building and took money, stereo equipment, guns, or other things.	Pr	SF
5. broken into someone else's locked car, without permission, to get something from it	Pr	MF
6. been quesitoned as a suspect by the police about some crime other than a traffic violation	OC	
7. broken the windows of an empty house or empty building	Pr	Mis.
8. taken little things worth less than $10.00 from a store without paying for them	Pr	Mis
9. taken hubcaps, wheels, battery, or some other expensive part from a car without permission	Pr	MF
10. taken gasoline from a car without permission	Pr	MF
11. taken things worth between $10 and $50 from without paying for them	Pr	Mis
12. threatened to beat someone up if they didn't give you money or something else you wanted	Ps	SF

13. carried a razor, switchblade, or gun with the intention of using it in a fight	Ps	MF
14. pulled a knife ro gun on someone to let them know you meant business	Ps	SF
15. beat someone so badly they probably needed a doctor	Ps	SF
16. let the air out of someone else's car or truck tires	Pr	Mis
17. taken a car belonging to someone else, without their permission, and taken it for a ride	Pr	SF
18. taken a tape deck, radio, or CB from someone else's car without permission	Pr	MF
20. taken things of large value (more than $50) from a store without paying for them	Pr	Mis
21. used a slug or fake money in a candy, coke, coin or stamp machine	Pr	Mis
22. fired a BB gun at soome other person, at passing cars, or at windows of buildings	Pr	MF
23. taken things you weren't supposed to take from a desk or locker at school	Pr	MF
24. bought something you knew had been stolen	Pr	MF
25. broken the windows fo a school building	Pr	MF
26. taken material or equipment from a construction site	Pr	MF
27. refused to tell the police or some other official what you knew about a crime	OC	
28. purposely broken a car window	Pr	Mis
29. picked a fight with someone you didn't know just for the heck of it	Ps	Mis
30. helped break up chairs, tables, desks, or other furniture in a school, church, or other building	Pr	Mis

31.	jumped or helped jump somebody and then beat them	Ps	SF
32.	used physcial force (like twisting an arm or choking) to get money from another person	Ps	SF
33.	tried to get awayfromthe police by fighting or struggling	Ps	SF
34.	used a knife, club, or gun to get something from someone	Ps	SF
35.	slashed the seats in a bus, movie theater, or other place	Pr	Mis
36.	drunk beer or wine	St	St
37.	drunk whisky, gin, vodka, or other hard liquor	St	St
38.	smoked marijuana (grass, pot)	DA	Mis
39.	gone to school when you were drunk or high on drugs	DA	Mis
40.	pretended to be older than you were to buy beer or cigarettes	St	St
41.	sold illegal drugs such as marijuana, LSD< cocaine, or heroin	DA	SF
42.	been held by the police or court until you could be released to your parents or guardian	OC	
43.	been placed on probation by a judge	OC	
44.	been cuaght shoplifting by the clerk or owner of a store	Pr	Mis
45.	gone out at night when your parents told you not to	St	St
46.	been suspended or expelled from school	St	St
47.	driven a car when you were drunk or high on drugs or alchohol	DA	MF
48.	taken barbituates (downers) or methedrine (speed or uppers) without a doctor's prescription	DA	MF
49.	used cocaine	DA	MF

50. cursed or threatened an adult in a loud and mean way just to let them know who was boss	Ps	Mis
51. run away from home and stayed overnight	St	St
52. hit one of your parents	Ps	Mis
53. taken angel dust, LSD, or mescaline	DA	MF
54. hit a teacher or other school official	Ps	Mis
55. taken a bicycle belonging to someone else, with no intention of returning it	Pr	MF
56. forced another persone to have sex relations with you when they didn't want to	Ps	SF
57. driven without a liscence	Ps	SF
58. tried to buy beer, wine, or liquor from a store	DA	St
59. kept or gave away something you knew was stolen	Pr	MF

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[1]Hindelang, M. J., Hirschi, T., & Weis, J. G. Measuring delinquency. Beverly Hills: Sage Publications, 1981.

[2]St = Status offense, DA = drug and alchohol offense, Pr = property offense, Ps = person offense, OC = official contact scale.

[3]St = status offense, Mis = criminal misdemeanor, MF = "minor", felony SF = "serious" felony.

Appendix A-6
Age of Onset Scale[1]

Listed below are some of the rules and acts from the last survey. Next to ech rule or act are spaces for ages 10 to 15. Read each item, and if you have done the act or broken the rule, place an X under the age that you first did it. If you first did it before you were ten please put an X under ten. If you did it first after age 17, put an X under 17.

	10	11	12	13	14	15	16	17
1. stole something from a store worth less than $10.00								
2. Taken something from someone else's wallet or pocketbook								
3. Taken something worth more than $10								
4. Ran away from home and stayed overnight								
5. Stayed out of school when your parents thought you were there								
6. drank beer, wine, or liquor								
7. smoked marijuana (pot, grass)								
8. Broken windows of school building								
9. Helped break up chairs, tables, desks, or other furniture in a school, church, or other building								
10. was questioned by the police as a suspect in a crime								

[1]Hindelang, M. J., Hirschi, T., & Weis, J. G. Measuring delinquency. Beverly Hills: Sage Publications, 1981.

Appendix A-7

Subject Informed Consent Form

We are interested in better understandngn rule breaking and law abiding behavior among teenagers. In order to do so we want to survey this behavior among teenage boys. Also, to help in our survey, we want to ask you some questions about your view on your family, yourself, and your school. We will also be surveying school records and juvenile court records.

All answers will be kept confidential. None of the answers will be directly traceable to you by anyone except the head of the project. We are only interested in group information and none of your answers will be traceable to you.

To participate in the survey you will have to meet twice with the researcher and fill out surveys. Each meeting will take about 35-45 minutes. If you have any questions feel free to ask the person distributing the surveys. The research director is Patrick Tolan, from the Department of Psychology at the University of Tennessee (phone number 974-2531).

I have read the above statement and have received a description of the survey. I have had the oppurtunity to ask any questions I had about the project and participation in the survey. I understand that any data or answers will remain confidential, with regard to my identity. Further, I understand that I am free to withdraw my consent and end my participation, without penalty, if it is necessary.

Signature_____

Date_____

Appendix A-8

Parental Permission Informed Consent Form

Dear Parent,

The students in your son's grade will be asked to participate in a survey of student's behavior. This survey will ask participants about rule breaking and law breaking behavior, and about contact with legal authorities. To help us in the survey, students that participate will also be asked to complete opinion surveys about family life, school, and social skills. Additionally, school records and juvenile court records will be surveyed. Your son's participation will aid in research by the University of Tennessee to understand better how to help teenagers with social adjustment.

All information in the survey will be kept in strictest confidentiality and will not be released to anyone, except as total figures. This will ensure that your son's particular answers will not be revealed and confidentiality will be secure. None of the information will be directly traceable back to a particular child. We are only interested in group information.

If you give permission for your son to participate, please sign below and have him return it to school. If you have any questions, please feel free to call the research director or the main office. You are free to withdraw your consent and to discontinue your son's participation at any time, without penalty, should the need arise.

Yours truly,

Patrick Tolan
Project Director
Dept. of Psychology
University of Tennessee
Phone 974-2531

Principal

I agree to allow my son_____to participate in the student survey at school.

Parent Signature_____

Date_____

APPENDIX B

ANCILLARY TABLES

Table B-1

Range, Mean, and Modal Scores for Independent Variables

Variable	Range	Mean	Mode
Individual Variables			
Age	11-18	14.84	15
Grade	6-9	9.20	10
EAS Score	1-27	13.33	17
SSER			
Peer Items	0-100	69.22	100
Parent Items	0-100	57.27	100
Teacher Items	0-100	74.96	100
Stranger Items	0-100	76.63	100
Average Score	0-100	69.55	100
Number of Friends	0-99	5.17	2
Plans more Education	0-1	.69	1
School Variables			
Performance			
Recorded GPA	.4-4.0	2.37	2.00
Student Est of Modal Grade	0-4	2.50	2
Difference of GPA and Estimate	.2-3.6	1.22	1
CAT Total %	3-99	52.78	80
CAT Reading %	1-99	53.85	46
CAT difference	0-60	.99	1.0
Rating of Reading	1-4	1.83	2
Repeated grade	0-1	.22	1
Social Behavior			
Recorded Absence	0-66	6.43	0
Student Estimate of Absences	0-3	1.90	1
Difference of Actual and Est. Abs.	0-4	1.52	1
Rating of Attendance	1-4	1.22	1
Disciplinary Actions	0-10	.84	0

Table B-1 (continued)

Variable	Range	Mean	Mode
Family Variables			
Structure			
Family Size	0-10	2.05	1
Birth Order	1-11	1.21	1
Intact Family	1-5	1.62	1
Systemic Functioning (FES Subscales)			
Cohesion	0-9	6.28	8
Conflict	0-9	3.41	2
Expressiveness	0-9	3.94	4
Independence	0-9	5.67	6
Achievement Orientation	0-9	6.23	6
Intellectual-Cult. Orientation	0-9	3.97	4
Activity-Recreation Orientation	0-9	5.65	7
Moral-Religious Emphasis	0-9	6.03	7
Organization	0-9	5.34	5
Control	0-9	4.93	5
Fowler's Factors			
Cohesion-Conflict	1.83-7.67	4.82	5.33
Organization-Control	2.50-8.75	5.63	6
Court Appear.	0-2	.07	0
Adjudicated	0-1	.05	0
Age of Onset	10-17	12.43	12

Table B-2

Chi-square Analysis of Rating of Reading and DSRM Response Categorizations

Rating of Reading	0	1	2	3	4	5	Total
	Level of Frequency of DSRM Responses						
Easy and Interesting	29	16	24	26	16	16	127
Easy but Boring	22	25	28	31	21	33	160
Hard but Interesting	5	4	6	7	3	4	29
Hard and Boring	2	2	2	2	4	9	21
Total	58	47	60	66	44	62	337

X^2 (20) = 24.57, p = .22, C= .26

	Level of Variety of DSRM Responses					
Easy and Interesting	28	13	17	32	37	127
Easy but Boring	18	16	24	39	63	160
Hard but Interesting	3	2	6	8	10	29
Hard and Boring	2	2	3	5	9	21
Total	51	33	50	84	119	337

X^2 (16) = 13.26, p = .65 C = .20

	Level of Seriousness of DSRM Responses					
Easy and Interesting	23	7	23	27	47	127
Easy but Boring	15	9	31	30	70	160
Hard but Interesting	3	2	5	9	10	29
Hard and Boring	2	0	3	7	9	21
Total	43	18	62	73	141	331

X^2 (16) = 15.90, p = .46, C = .21

Table B-3

Chi-square Analyses of Absence Category and Frequency of DSRM Responses

Absences	0	1	2	3	4	5	Total
	Level of Frequency of DSRM Responses						
0	13	12	16	14	6	11	72
1-10	30	23	29	36	28	32	178
10+	14	12	15	16	9	18	84
Total	57	47	60	66	43	61	334

X^2 (10) = 5.02, p = .89, C = .12

	Level of Variety of DSRM Responses					
0	16	7	14	11	24	72
1-10	22	20	23	53	60	178
10+	13	5	12	20	34	84
Total	51	32	49	84	118	334

X^2 (8) = .11.64, p = .17, C =.18

	Level of Seriousness of DSRM Responses					
0	12	3	14	10	33	72
1-10	19	10	34	45	70	178
10+	12	4	14	18	36	84
Total	43	17	62	73	139	334

X^2 (8) = 5.67, p = .68, C = .13

Table B-4

Chi-square Analyses of Marital Status and DSRM Response Categorizations

Marital Status	0	1	2	3	4	5	Total
	Level of Frequency of DSRM Responses						
Intact	47	28	50	44	26	35	230
Divorced/Remarried	9	15	10	22	15	20	91
Other	2	4	0	0	3	7	16
Total	58	47	60	66	44	62	337

X^2 (10) = 27.34, $p < .01$, $C = .27$

	Level of Variety of DSRM Responses					
Intact	38	25	36	52	79	230
Divorced/Remarried	10	5	13	30	33	91
Other	13	3	1	2	7	16
Total	51	33	50	84	119	337

X^2 (8) = 9.94, $p = .27$, $C = .17$

	Level of Seriousness of DSRM Responses					
Married	33	14	43	49	91	230
Divorced/Remarried	2	0	3	3	8	16
Other	8	4	16	21	42	91
Total	43	18	62	73	141	337

X^2 (8) = 3.97, $p = .86$, $C = .11$

Table B-4 (continued)

	Level of Frequency of DSRM Responses						
Intact	47	28	50	44	26	35	230
Other	11	19	10	22	18	27	107
Total	58	47	60	66	44	62	337

X^2 (5) = 18.07, $p < .01$, $C = .23$

	Level of Variety of DSRM Responses					
Intact	38	25	36	52	79	230
Other	13	8	14	32	40	107
Total	51	33	50	84	119	337

X^2 (4) = 3.86, $p = .43$, $C = .11$

	Level of Seriousness of DSRM Responses					
Intact	33	14	43	49	91	230
Other	10	4	19	24	50	107
Total	43	18	62	73	141	337

X^2 (4) = 3.16, $p = .53$, $C = .10$

	Level of Frequency of DSRM Responses						
2 Parent Family	53	36	55	49	37	52	282
Other	5	11	5	17	7	10	55
Total	58	47	60	66	44	62	337

X^2 (5) = 18.07, $p < .01$, $C = .23$

Table B-4 (continued)

Marital Status	0	1	2	3	4	5	Total
	Level of Variety of DSRM Responses						
2 Parent Family	46	28	41	67	100		282
Other	5	5	9	17	19		55
Total	51	33	50	84	119		337

X^2 (4) = 2.68, p = .62, C = .09

	Level of Seriousness of DSRM Responses						
2 Parent Family	39	15	49	63	116		282
Other	4	3	13	10	25		55
Total	43	18	62	73	141		337

X^2 (4) = 4.11, p =.54, C = .10

Table B-5

ANOVAs of Variables in Regression Models of DSRM Responses

Source	DF	SS	MS	F
		Frequency ANOVAS		
Age				
Model	5	13450.71	2690.14	10.90***
Error	331	81715.76	246.88	
Total	336	95166.47		
Age of first Offense				
Model	5	925.16	185.03	33.52***
Error	331	1827.34	5.52	
Total	336	2752.50		
EAS Score				
Model	5	603.69	120.74	4.04**
Error	331	9883.08	29.86	
Total	336	10486.78		
SSER Parent Items				
Model	5	22413.93	4482.79	4.82*
Error	330	306691.40	929.37	
Total	335	329105.33		
Recorded GPA				
Model	5	715.24	143.05	3.22*
Error	329	14614.50	4.52	
Total	334	15329.74		
Est. Modal Grade				
Model	5	7.41	1.48	2.81, $p = .02$
Error	331	174.84	.53	
Total	336	182.25		
Disciplinairy Actions				
Model	5	67.66	13.53	6.03***
Error	331	742.37	2.24	
Total	336	810.02		

Table B-5 (continued)

Source	DF	SS	MS	F
Conflict Subscale				
Model	5	150.06	30.01	6.68***
Error	330	1483.44	4.50	
Total	335	1633.50		
Cohesion Subscale				
Model	5	143.01	28.60	6.67***
Error	330	1416.00	4.29	
Total	335	1559.00		
Organization Subscale				
Model	5	50.67	10.13	2.45, p = .03
Error	330	1364.32	4.13	
Total	335	1415.00		
Intellectual-Cultural Or. Subscale				
Model	5	59.71	11.94	3.18*
Error	330	1241.05	3.76	
Total	335	1300.76		
Moral-Religious Emph. Subscale				
Model	5	97.28	19.46	5.91***
Error	330	1086.43	3.29	
Total	335	1183.70		
Independence Subscale				
Model	5	27.01	5.40	1.69, p = .14
Error	330	1055.66	3.20	
Total	335	1082.67		
Variety ANOVAS				
Age				
Model	4	7141.09	1785.27	6.73***
Error	332	88025.38	265.14	
Total	336	95166.47		
Age of first Offense				
Model	4	962.68	240.67	44.64***
Error	332	1789.82	5.39	
Total	336	2752.50		

Table B-5 (continued)

Source	DF	SS	MS	F
EAS Score				
Model	4	753.53	188.38	6.43**
Error	332	9733.25	29.32	
Total	336	10486.78		
SSER Parent Items				
Model	4	15657.64	3914.41	4.13*
Error	330	313447.69	945.97	
Total	335	329105.33		
Recorded GPA				
Model	4	305.67	76.42	1.68, $p = .15$
Error	329	15024.07	45.53	
Total	334	15329.74		
Est. Modal Grade				
Model	4	9.80	2.45	4.72**
Error	332	172.45	.52	
Total	336	182.25		
Disciplinary Actions				
Model	4	23.03	5.76	2.43, $p < .05$
Error	332	786.99	2.37	
Total	336	810.02		
Conflict Subscale				
Model	4	156.45	39.1	8.77***
Error	331	1477.04	4.46	
Total	335	1633.50		
Cohesion Subscale				
Model	4	104.55	26.14	5.95***
Error	330	1454.550	4.39	
Total	335	1559.00		
Organization Subscale				
Model	4	59.47	14.87	3.63*
Error	330	1364.32		
Total	335	1415.00		
Intellectual-Cultural Or. Subscale				
Model	4	119.06	29.76	8.34***
Error	331	1181.70	3.57	
Total	335	1300.76		

Table B-5 (continued)

Source	DF	SS	MS	F
Moral-Religious Emph. Subscale				
Model	4	82.65	20.66	6.21***
Error	331	1101.05	3.33	
Total	335	1183.70		
Independence Subscale				
Model	4	11.50	2.87	.89, p = .47
Error	330	1071.17	3.24	
Total	335	1082.67		

Seriousness ANOVAS

Age				
Model	4	5614.68	1403.67	5.20**
Error	332	89551.79	269.73	
Total	336	95166.47		
Age of first Offense				
Model	4	954.66	238.67	44.07***
Error	332	1797.84	5.42	
Total	336	2752.50		
EAS Score				
Model	4	676.99	169.25	5.73**
Error	332	9809.79	29.32	
Total	336	10486.78		
SSER Parent Items				
Model	4	12262.30	3065.58	3.20*
Error	331	316843.04	957.23	
Total	335	329105.33		
Recorded GPA				
Model	4	238.17	59.54	1.30, p = .27
Error	329	15091.57	45.73	
Total	334	15329.74		
Est. Modal Grade				
Model	4	6.15	1.54	2.90 p = .02
Error	332	176.10	.53	
Total	336	182.25		

Table B-5 (continued)

Source	DF	SS	MS	F
Disciplinairy Actions				
Model	4	29.75	7.74	3.16*
Error	332	780.27	2.35	
Total	336	810.02		
Conflict Subscale				
Model	4	91.57	22.89	4.91*
Error	330	1541.44	4.50	
Total	335	1633.50		
Cohesion Subscale				
Model	4	55.19	13.80	3.04, p = .02
Error	330	1503.81	4.54	
Total	335	1559.00		
Organization Subscale				
Model	4	61.64	15.41	3.77*
Error	330	0953.36	4.13	
Total	335	1415.00		
Intellectual-Cultural Or. Subscale				
Model	4	61.38	15.35	4.10*
Error	330	1239.38	3.74	
Total	335	1300.76		
Moral-Religious Emph. Subscale				
Model	4	66.56	16.64	4.93**
Error	331	117.14	3.38	
Total	335	1183.70		
Independence Subscale				
Model	4	19.78	4.94	1.54, p = .19
Error	331	1062.89	3.21	
Total	335	1082.67		

* p < .01

** p< .001

*** p< .0001

Table B-6

Correlations of Variables to Categorizations of DSRM Responses, Older Group

Variable	DSRM Categorization		
	Frequency	Variety	Seriousness
Individual Variables			
Age	.19*	-.02	-.06
EAS Score	.12	.16	.09
SSER Parent Items	.22**	.15	.19**
Plans more Education	-.24**	-.16	-.13
School Variables			
Recorded GPA	-.18*	-.17*	-.14
Student Est. of Modal Grade	-.06	-.25**	-.13
Disciplinary Actions	.28**	.17*	.16
Family Variables			
Intact Family	-.19*	-.12	-.13
FES Subscales			
Cohesion	-.22**	-.32***	-.32***
Conflict	.22**	.24**	.16
Independence	.09	.07	.08
Intellectual-Cult. Orientation	-.11	-.18*	-.16
Moral-Religious Emphasis	-.27***	-.32***	-.32***
Organization	-.09	-.15	-.15
Age of 1st off.	-.38***	-.35***	-.43***

* $p < .01$

** $p < .001$

*** $p < .0001$

Table B-7

Correlations of Variables to Categorizations of DSRM Responses, Younger Group

Variable	DSRM Categorization		
	Frequency	Variety	Seriousness
Individual Variables			
Age	-.06	-.05	-.04
EAS Score	.27	.41**	.43**
SSER Parent Items	.32*	.30*	.32*
Plans more Education	-.25	-.25	-.27
School Variables			
Recorded GPA	.09	.11	.13
Student Est. of Modal Grade	-.13	-.13	-.11
Disciplinary Actions	.05	.08	.09
Family Variables			
Intact Family	-.14	-.08	-.16
FES Subscales			
Cohesion	-.11	-.20	-.22
Conflict	.21	.22	.16
Independence	-.03	.16	.09
Intellectual-Cult. Orientation	-.11	-.38**	-.40**
Moral-Religious Emphasis	-.16*	-.11	-.16
Organization	-.04	-.07	-.05
Age of 1st off.	-.47***	-.40**	-.43***

* $p < .01$

** $p < .001$

*** $p < .0001$

VITA

Patrick H. Tolan was born in Buffalo, New York on May 30, 1953. He is one of ten children of Phyllis and Francis Tolan, and lived in New York, Massachussetts, and Pennsylvania for portions of his childhood. After graduating from Central Bucks High School East in June of 1971, he attended Temple University from September of 1972 until January of 1978, and was awarded a Bachelor of Arts degree in psychology. In fall of 1978 he began work toward his Master's and Doctoral degree at The Univeristy of Tennessee, Knoxville, as a student in the School/Community Psychology Program. He received his master's degree in Psychology in August of 1980. During the 1981-1982 academic year, he completed an internship in Clinical Child Psychology at Tufts Medical School/New England Medical Center, Boston, Massachussetts. The Doctor of Philosophy degree with a major in Psychology, was awarded in December, 1983. Upon completion of his doctoral studies, the author began a postdoctoral fellowship at Michael Reese Hospital and the University of Chicago.